(Ireland.)

THE

THIRD REPORT

OF THE

COMMISSIONERS

Appointed to enquire into the Nature and Extent of the several

BOGS IN IRELAND,

AND, THE

PRACTICABILITY OF DRAINING AND CULTIVATING THEM.

Ordered, by The House of Commons, *to be printed,*
28 *April* 1814.

130. A

THE REPORT - - - - - - - - - - p. 3—5.
THE APPENDIX - - - - - - - - - p. 7, &c.

TO THE

Right Honourable and Honourable The Knights, Citizens and Burgesses, of The United Kingdom of Great Britain and Ireland, in Parliament assembled.

THIRD REPORT

Of the COMMISSIONERS appointed to enquire into the Nature and Extent of the several BOGS in IRELAND; and the Practicability of DRAINING AND CULTIVATING Them.

IN our FIRST and SECOND Reports, we submitted to Your Honourable House, the Reports which we had received from our Engineers, on Six large Districts, containing in the whole 233,538 English acres of Bog.

We now proceed, in the execution of our Commission, to lay before Your Honourable House, the Ten following Reports, which we have since received from our Engineers:

	Containing of Bog, English Acres,
(1.)—From Mr. LONGFIELD; on the District of *Lough Gara*, situated in the Counties of Roscommon, Sligo and Mayo	83,689.
(2.)—From Mr. AHER; on a District lying between *Roscrea* and *Killenaul*, situated in the Counties of Tipperary, Kilkenny and the Queen's County - - - - - -	36,025.
(3.)—From Mr. AHER; on a District lying to the Westward of *Maryborough*, and situated in the Queen's County -	14,754.
(4.)—From Mr. COCKBURN; on a District in the Western extremity of the County of *Clare* - - - - -	22,340.
(5.)—From Mr. BRASSINGTON; on a small District on the Banks of the River *Barrow*, in the Counties of Kildare and the King's County - - - - - - -	7,459.
(6.)—From Mr. JONES; on the District of *Lough Corrib*, lying in the Counties of Galway and Mayo - - -	83,724.
(7, 8, 9.)—From Mr. BALD; on three large Districts in the County of *Mayo* - - - - - -	161,962.
(10.)—From Mr. TOWNSHEND; on a great District surrounding *Lough Neagh*, and extending to the Mouth of the River *Bann*, lying in the Counties of Antrim, Down, Armagh, Tyrone and Londonderry - - - - -	64,855; —

Exclusive of 10,673 Acres of Lands, inundated by the Winter level of the Lake.

The Bogs in these Districts are, internally, of the same composition as those we have already described; and are similarly circumstanced: Externally, they are intersected or bounded by streams, to which their surfaces have ample fall for the purposes of drainage; divided by strips of gravelly soil; surrounded by dry upland; and generally varied with islands; consisting, except in a few instances, of limestone gravel (the substance best adapted to their improvement;) their average depth, and the nature of the under strata, agree with those of other districts.

In our First and Second Reports to Your Honourable House, we have so fully detailed the principles of Drainage and agricultural Reclamation of Peat Soil, collected from the opinions and enquiries of our Engineers, that, to enter again upon the same subject, would only lead us to repeat what has been already stated. Our general observations, resulting from the whole of the enquiry, will be found in the conclusion of our FOURTH and last Report, which we submit to Your Honourable House at the same time with the present; we shall therefore here confine ourselves to pointing out a few of the more remarkable instances of successful improvement, which has been effected in these Districts.

Mr. *Longfield* gives us the following account of an improvement effected on the estate of Lord Dillon:

"The Bog where these improvements were effected, lies on the south side of the road from Lough Glyn to Castlereagh, and joining the lands of Aughalour, which it must be observed is a hill of the finest limestone in the county, and where the only limestone quarries are to be had in that neighbourhood; it is therefore not surprising to find subterraneous communications round the verges of those lands, being composed of porous limestone, rock and gravel. At the foot of this hill, Lord Dillon laid out a certain portion of red Bog, in lots for his labourers, which was granted to them rent-free (a well adjudged and great stimulus to improvement) ten or twelve years ago: they commenced by building cabins in the driest part of the Bog next the land, and by cutting away the Bog as fast as their means would admit: During the progress of these operations, it was discovered that the under stratum being about eight or ten feet below the surface, was composed of limestone and gravel of the best description, suited to the purposes of Bog improvement. It was therefore suggested, that pits should be made in the Bog for the purpose of raising this manuring gravel to the surface, which was accordingly adopted; and the system continued with such effect, that they have now completely reclaimed ten or twelve acres, which, from being as bad sponge Bog as any in the country, now produces as good crops of potatoes, oats and hay, as any upland in the neighbourhood. The part thus reclaimed, was originally from four to eight and ten feet deep; the chief of which the improvers cut away for turf before they commenced gravelling the surface, but finding that operation too slow, they are now determined to gravel the natural surface of the Bog after being drained, which some of the most intelligent of them assured me, they had no doubt would succeed."

Mr. Longfield further informs us, that he had the satisfaction to find, that Doctor Richardson's system of Bog improvement, has been long anticipated by almost every poor tenant in the islands of Cloneagh, Cloonagh, &c. &c. belonging to Mr. French; "at the former of which Islands, says Mr. Longfield, I was gratified on viewing a specimen of Fiorin grass cultivated on red Bog about twenty feet deep; this piece of Bog, after being drained and levelled, got a sprinkling of gravel, and was sown with cabbage-seed two years ago; last year it was planted with potatoes, which being dug out, was in spring of the present year (1811) laid

laid down with Fiorin strings, exactly in the way recommended by Doctor Richardson; the whole piece under the grass contains 33 perches of Bog, which has this year produced no less than *two tons weight* of hay, which, as the common people of the country say, is better for horses than hay and oats; and will fatten a beast much sooner than any other kind of forage which they are in the habit of using in that country. This circumstance (was any additional evidence necessary) at once proves that the red Bogs may all be reduced to tracts of profitable pasture and meadow; and in many cases may be applied to the produce of oats and potatoes, if gravel can be had from the under strata, as a Aughalour."

Mr. *Aher* informs us, that, within these few years, upwards of 200 acres of Bog in different parts of this district have been planted with trees of various ages, from two to ten years, consisting of Scotch fir, spruce fir, larch oak, ash, alder, birch, beech, hazel and timber sallow; almost all of which appear healthy, and promise to do well. The Scotch fir is the most abundant in proportion. Some of those trees are planted on wet red Bog, twenty feet from the gravel, others on compact black Bog fifteen feet in depth; and some have had a few shovels full of gravel thrown under the roots when planted on the light spungy turf, which evidently answers better than being without it.

Those trees that have been planted on firm black Bog, thrive as well as the same species on upland.

Mr. Lidwell, of Dromard, planted some larch and Scotch fir eleven years ago, and they are now as good as any trees of the same age on the upland in the vicinity; Messrs. Birch of Roscrea, have planted about 70 acres of cut-out Bog and wet red Bog; the former are thriving as well as the generality of plantations on upland; the latter they have only commenced on last season, and the number which have missed are not by any means unusual.

Mr. Aher describes a successful improvement of Bog by Mr. Smith, of Racket-Hall. He states, that on the north part of the division near Racket-Hall, the process of improvements has been carried on, with great success, on red fibrous as well as black compact Bog, which have produced abundant crops of potatoes, oats and hay; and the Bog which had long lain in a state of sterility, has been increased in value nearly equal to the adjoining upland farms.

J. LESLIE FOSTER. (L. S.)
WILLIAM GORE. (L. S.)
HENRY HAMILTON. (L. S.)
HANS BLACKWOOD. (L. S.)

April 1814.

APPENDIX

TO THE

THIRD REPORT

ON THE

BOGS IN IRELAND.

LIST

LIST of APPENDIX.

Appendix, No. 1.

The REPORT of Mr JOHN LONGFIELD, on the District of *Lough Gara*, in the County of Roscommon,—with Two Engravings - - - - - - - p. 9—60
Pl. I. —MAP of the First, Second, Third, Fourth, Fifth and Sixth Divisions of the *Lough Gara* District - - - - - - - *to face* - p. 60
Pl. II. —MAP of the 7th, 8th, 9th, 10th and 11th Divisions of - - D° - *to follow* Pl. I.

Appendix, No. 2.

The REPORT of Mr. DAVID AHER, on the District of Bog, N° 8. lying between *Roscrea* and *Killenaul*, in the Counties of Tipperary, Kilkenny, and Queen's County;—with Four Engravings - - - - - - - - - - - p. 61—82
Pl. III.—SECTIONS; Marl on Bogs, &c. - - - - - - *to face* p. 82
Pl. IV.—Section of a Turf Bank, exhibiting, Three distinct grounds of Trees - *to follow* Pl. III.
Pl. V.—Map of the Southern Part of District N° 8 - - - - - *to follow* Pl. IV.
Pl. VI.—Map of the Bogs of District N° 8. situated in the Counties of Tipperary, Kilkenny, and Queen's County; with the Lines of the proposed Drains *to follow* Pl. V.

Appendix, No. 3.

The REPORT of Mr. DAVID AHER, on the District N° 12, in the Queen's County;—with one Engraving - - - - - - - - - - - - p. 83—96
Pl. VII.—MAP of the Bogs of District N° 12, in the Queen's County - - - *to face* p. 96

Appendix, No. 4.

The REPORT of Mr. THOMAS COLBOURNE, on the District N° 10; in the Western Extremity of the County of *Clare*;—with one Engraving - - - - - - p. 97—110
Pl. VIII.—MAP of the Bogs in the West Part of the County of Clare - - *to face* p. 110

Appendix, No. 5.

The REPORT of Mr. RICHARD BRASSINGTON, on District N° 2; part of which is situate in the County of *Kildare*, and part in the *King's* County;—with one Engraving - p. 111—122
Pl. IX.—MAP of District N° 2, comprising Part of the County of Kildare, and detached parts of the King's County - - - - - - - *to face* p. 122

Appendix, No. 6.

The REPORT of Mr. J. ALEX. JONES, on the District of *Lough Corrib*, in the Counties of Galway and Mayo;—with Four Engravings - - - - - - - p. 123—130
Pl. X. —MAP of part of the Bogs in the District of Lough Corrib, in the Counties of Galway and Mayo - - - N° 1. - - *to face* p. 130
Pl. XI. —MAP of D° - - in the County of Galway; N° 2 - - *to follow* Pl. X.
Pl. XII. —MAP of D° - - in D° - - - N° 3. - - *to follow* Pl. XI.
Pl. XIII.—MAP of D° - - in D° - - - N° 4. - - *to follow* Pl. XII.

Appendix, No. 7.

The REPORT of Mr. WILLIAM BALD, on Three large Districts in the County of *Mayo*;—with one Engraving - - - - - - - - - - - - p. 131—136
Pl. XIV.—MAP of the Bogs lying on the South-Western part of County of *Mayo* - *to face* p. 136

Appendix, No. 8.

The REPORT of Mr. WILLIAM BALD, on the Second District; South-Western part of the County of *Mayo*; *Louisborough* Bog, &c;—with one Engraving - - - - p. 137—148
Pl. XV.—MAP of various Bogs in this District - - - - - *to face* p. 148

Appendix, No. 9.

The REPORT of Mr. WILLIAM BALD, on the Third District; Eastern part of the County of *Mayo*;—with two Engravings - - - - - - - - p. 149—152
Pl. XVI.—MAP of various Bogs in this District - - - - - *to face* - - p. 152
Pl. XVII.—Another MAP of other Bogs in this District - - - *to follow* Pl. XVI.

Appendix, No. 10.

The REPORT of Mr. THOMAS TOWNSHEND, on a great District which comprises a number of Bogs in the Counties of *Armagh*, *Tyrone*, *Down*, *Antrim*, and *Londonderry*, also *Lough Neagh*;—with ten Engravings - - - - - - - - p 153—166
Pl. XVIII.—MAP, N° 1, of the Lough Neagh District - - - - *to face* p 166
Pl. XIX. —MAP, N° 2, of - D° - D° - - - - *to follow* Pl. XVIII.
Pl. XX. —MAP, N° 3, of - D° - D° - - - - *to follow* Pl. XIX.
Pl. XXI. —MAP, N° 4, of - D° - D° - - - - *to follow* Pl. XX.
Pl. XXII. —MAP, N° 5, of - D° - D° - - - - *to follow* Pl. XXI.
Pl. XXIII.—MAP, N° 6, of - D° - D° - - - - *to follow* Pl. XXII.
Pl. XXIV.—MAP, N° 7, of - D° - D° - - - - *to follow* Pl. XXIII.
Pl. XXV. —SECTION of the River BANN - - - - - *to follow* Pl. XXIV.
Pl. XXVI.—Other Parts of D° - - - - - - - - *to follow* Pl. XXV.
Pl. XXVII.—D° - - D° - - - - - - - - *to follow* Pl. XXVI.

APPENDIX

TO THE THIRD REPORT OF THE COMMISSIONERS ON THE BOGS IN IRELAND.

Appendix, N° 1.

The REPORT of Mr. John Longfield, on the District of *Lough Gara*, in the County of Roscommon:—With Two Engravings; viz.

Pl. I. MAP of the 1st, 2nd, 3rd, 4th, 5th, & 6th Divisions of *Lough Gara* District:
Pl. II. MAP of the 7th, 8th, 9th, 10th, & 11th Divisions of - - - D°.

To the Commissioners appointed to enquire into the nature and extent of the several Bogs of Ireland, and the practicability of draining and cultivating them.

Gentlemen,

THIS District, being the Second which you have done me the honour to commit to my charge, is situated on the North-west end of the county of Roscommon, and includes a small part of the counties of Mayo and Sligo, east and west of the town of Ballaghadareen. It stretches in length from Carrick-on-Shannon to Ballinlough, being a distance of 20 Irish miles, and in breadth from Castlerea to Ballaghadareen, being (on an average) 8 miles, taking in a tract of country of about 160 square miles, or 102,400 Irish acres; of which A. 30,421. 1. 0. Irish acres, or A. 49,277. 1. 23. English acres, are the unprofitable Red bogs contained therein.

25½ English,

Previous to a general description of this District, I beg leave to mention a few circumstances touching the plan of operations, which I judged expedient to pursue, in order (as I humbly conceive) to fully answer the objects of this investigation.

In commencing this arduous task, it ought to be recollected, that I did so without the aid of even the most indifferent sketch of the country wherein the Bogs, forming the subject of this Report, are situated; and therefore it became necessary, in the first instance, to make an actual survey of the surrounding and intermediate country to which my attention was to be directed. This survey has been executed by actual measurement and trigonometrical angles, formed on a base line from Lough Garra to the Turlogh under Scur-Hill, being a length of 5 miles 6 furlongs 36 perches, which was measured with as much accuracy as the nature of the country, and the value of my time, would admit of: From this line the situation of the great distances, and remarkable features of the country, were ascertained; and the intermediate work of land and bogs was executed in the usual way by the instrument and chain. I mention these particulars to show, that the general survey has not been done in a loose way, or copied from indifferent materials, thereby multiplying inaccuracies, and forming general opinions of improvements for the benefit of this extensive tract of country and bog, which at a future day would be found to have resulted from an imperfect idea of the true situation of the roads, rivers, lakes and streams, by which this country is intersected. However, in the execution of this part of my duty, I must beg to impress on your minds, that I have not lavished my time with any unnecessary minutiæ of survey, but have only done what I conceived actually necessary, in order to give a satisfactory view of the country wherein this district is comprehended, and which, considering its extent (being in quantity little less than the whole of the county of Dublin) could not be done with equal accuracy by any other mode now practised.

M. F
7. 3. English.

In taking the levels of this District, I confined myself chiefly to the natural lines of ventage, which required improvement, and also to such lines as I conceived eligible for main drains, the sinkings of which should necessarily be calculated from their respective sections; therefore, with the exception of carrying on my levels from one point to another, and the section through the centre of the great Bog of Frenchpark and Castlerea, I have not run any promiscuous lines of levels through the country, but have kept in view the ascertaining of all the necessary sinkings for completing the ultimate object of effectual drainage or navigation, as the case may be: for, in my mind, it matters not which of the bogs is the

No. 1. Mr. Longfield's Report on Lough Gara District.

highest (being unconnected), provided each of them have ample falls to their respective outlets; therefore it is the level of the Bogs as to their local ventages, and to each other, that I have chiefly attended to; however, for sake of reference, I have through the whole district made the surface water of Lough Garra, in midsummer, the criterion to which all my levels refer. These levels, showing the rise from said Lough, are marked both on my map and sections in small black figures. In all cases where bridges or pipes occur, I have ascertained the level of the suffet of their highest arches, being the most permanent fixed point to which my future reference may be made; and these points I have distinguished in the map by the letters K.S. signifying the key stone of that bridge, being the stated number of feet above the surface water of Lough Garra in midsummer.

TOPOGRAPHY.

ON the subject of the general topography of this district, it may be truly said to display most of the varieties of nature, in its undulating surface, its soil, its bogs, lakes and rivers. Of its richness of soil, almost every grazier in this kingdom will bear testimony; particularly to those parts called the plains of Boyle, the hills of Kilcorky, Racrogan, Ballinegar, &c. &c. which composes the whole of the south and eastern side of the district from Castlerea to Elphin, Carrick and Boyle, being a continuance of as fine a limestone grazing country as any in Ireland, and interspersed with the residences of some of its most respectable graziers. The lands about Kilcorky, and in the plains of Boyle, although of this fine description, are nevertheless very high, and are supposed to be the summit of the county of Roscommon. I am, however, of opinion, that Tairymount Hill, between Lough Glynn and Frenchpark, is the highest point of that country. There is one certain fact, namely, that a stream, which rises in the eastern side of Tairymount Hill, runs by Cloonshanville to Lough Garra (a principal source of the river Shannon;) and another stream, rising on the south-west side of said hill, and running to Castlerea, forms a principal source of the river Suck; which proves, that Tairymount Hill must be the highest ground in the county of Roscommon, and as such I have chosen it for the chief point of observation in taking my trigonometrical angles.

A. R. P.
4,736 1. 23.
English.

On the north side of this district is situated Lough Garra, which contains 2,924 Irish acres; this lake is by much the most considerable in or adjoining the district, and the lowest sheet of water connected with the Bogs; I have therefore made its usual summer surface water (being 4 feet 6 inches under suffet of the largest arch of Breeogue bridge) the criterion from which all my levels are taken, as before stated. In times of great flood, the waters of the lake rise about 4 feet higher than the above-mentioned level, and in the driest summer the waters fall about 1 foot 6 inches below it, making a difference between the highest winter and lowest summer water, of 5 feet 6 inches.

This great rise of Lough Garra in winter, spring, or harvest time, frequently happens, owing to the number of streams and rivers which discharge their waters into that lake, all of which have but one passage to escape, namely, the Boyle river, which river, although naturally capable of discharging the waters of the lake by Boyle to the river Shannon, is now rendered insufficient by the large Eel weir at Carrymore or Millmount, which occupying the whole breadth of the river, reduces the passage for the waters to the eye of the weir, being about four or five feet; through this passage only, the waters of the Breeogue river, which at the lake is four perches wide, and the waters of the river Lung, which at the float is also four perches wide, together with several lesser streams, are all obliged to force their way; which pass being inadequate in wet seasons, the lake rises to the height before-mentioned, and throws back water to an extent of several miles on the low bottom and meadow grounds on each side those rivers and streams, and along the verge of the lake.

This weir is held by Mr. Powell, under Lord Lorton for two lives, at £.20. per annum, and is let by him at a profit rent of £.5.; it has regular wing walls 4 feet 6 inches high and 7 feet broad, and near 700 feet long; the whole of which, after the landlord and tenants are paid for their interests, Mr. Powell (being on the spot) will remove for 100 guineas. The taking down of this weir will be of considerable importance not only to the landholders whose grounds lie on the verges of the lake, but also to the improvement of the bogs connected with all the rivers falling into it, particularly the Breeogue river.

BREEOGUE RIVER.

See Section 79.

THIS River, which is formed by the streams of Cloonshanville, Ballinegar and Loughbally, assumes the shape of a considerable one at the bog of Hermitage, belonging to O. O'Connor, Esq. where it is from one to three perches wide, and from three to six feet deep, and runs in a circuitous way without any perceptible fall for near three miles, to Balla bridge, where there is a fall of 2 feet 6 inches in about 100 perches, and which is the only fall of the river in midsummer from the bog of Hermitage to Lough Garra, being a distance of near six miles, along the course of the river. In winter time, when Lough Garra rises to the flood mark, the trifling fall at Balla is entirely done away by the back-water of the lake, and consequently all the streams and drains communicating with the river to the foot of Mr. O'Connor's ground, rise from two to three feet above summer water, and the flat bottoms along the whole course of the river for these six miles presents one continued flood, which in many places is from 20 to 60 perches wide. To remedy this great loss by flood (which is immense if it happens about Lammas, when the meadows are covered with hay)

hay) there is but one way, namely, the lowering of Lough Garra, or at all events the keeping down its waters to somewhat near the summer level, which last, I do most strongly recommend; first, because it comes within the compass of moderate expense, by removing the weir at Currymore; and, secondly, because the summer water is no way detrimental to the low grounds, or to the ultimate improvement of the bogs.

The small fall of 2 feet 6 inches at Balla bridge should also be removed for the purpose of giving a more speedy vent to the waters above it, and also by lowering Lough Bally to drain the immense scraws and sloughs, which amount to at least 50 Irish acres, that in the driest summer are scarcely equal to bear the weight of two year old cattle. Lough Bally is but 2 feet 6 inches above Lough Garra, although situated near six miles from it by the course of the river; and therefore by taking down that 2 feet 6 inches at Balla bridge as before-mentioned, and deepening a few points, there may be opened a line of navigation for small craft, the whole way from Lough Garra to Lough Bally, which for the purpose of boating gravel, will be a matter of great importance in lessening the expense, and thereby facilitating the ultimate improvements of the bogs on both sides.

RIVER LUNG.

THIS River, with its branches, forms the most interesting feature on the north side of this district from Lough Garra to Lough Orler, between which points the waters of a variety of rivers, streams and lakes, unite near Crunnane bridge, and after a run of seven or eight miles, fall into the west end of Lough Garra below the town of Ballaghadereen. The effect of the floods from Lough Garra is also sensibly felt along the course of this river; so much so, that the mill of Lung, which is situated on the river 3½ miles from the lake, is frequently stopped by the back-water in the tail-race, and such are its effects on the low bottom grounds from the mill to the lake, that in the month of August last, the mowers were actually cutting the meadows in six inches of water, and carrying off the produce as fast as they were able. This being the case last season, which was in that month uncommonly favourable, what must be the destructive effects of great floods, which often happen in August and September, when many hundreds of haycocks cover these low meadows, and which from the sudden fall of rain, it is impossible to remove before the greater part is swept away by the rapid influx of water.

The sources of the river Lung may be traced to Lough Erit and Lough Orler, from whence it receives its chief supply, in addition to the Aughaduffin and Cullagh streams. However, the confluence of the streams from Lough Orler, and the stream from Aughaduffin, is not visible, as each of them run subterraneously for a considerable distance, before and after the uniting of their waters; the stream from Lough Orler sinks into the ground at Feigh, and the stream from Aughaduffin sinks at Curragecnagruchaun, each of which points are in opposite directions, a mile from the bridge of Feigh, where the waters again appear rising out of different gulphs, and forming one considerable river, runs to Crenan, and Lunge as before mentioned. These two rivers, the Lung and Breeogue, are the chief rivers of the district, and through which three-fourths of the waters of it are discharged. There are however some minor streams, particularly those from Lougheyhyn and Cloonkan; which shall be treated of in their proper places, being the 2d and 3d divisions of the district. It happens in this district that all the rivers connected with it issue from the Bogs which form the subject of this Report, and consequently the sources of them can be traced to their different summits, even after we pass that point where they become *unworthy* the appellation of either river or stream, and are marked only by a slough or swallow hole, or by what is more frequent, a *green vein through the bogs*, produced by the irrigation of the scarce perceptible watercourse. This constant irrigation has always the effect even in the deepest Red bog, of promoting the vegetation of herbage and stopping the vegetation of the bog moss. Hence it is, that the Red bog on each side not being checked by irrigation, is always considerably higher, and therefore discharges the surface water of it into the course of these veins, which thereby have become the natural ventages of the bogs. See Sections Nos 1 & 2.

These are the same description of veins, which in my Report of the 5th, or River Brusna District, are denominated Cushes, but in the western counties they are called Ashkeys. These ashkeys or cushes being beyond all manner of doubt the natural ventages of the bog waters, I have in this district (as well as in that of the river Brusna) laid out my lines of main drains to assist the operations of them; and my opinion is the more strengthened by my last year's experience, that in carrying on any system of bog drainage, we must be guided by the efforts of unassisted nature, and improve those lines by art, which she has (though imperfectly) marked, as the natural ventage, I am convinced, if sought for, may be found in every extensive bog. This much I can myself answer for, that I have not found any one 500 Irish acres, in the two districts committed to my charge (containing nearly 60,000 Irish acres), that from its gradual declination of surface, could be *cut or carved* into *a regular system of drainage*, forming either *extensive* squares or parallelograms, without evidently running counter to those natural ventages, and thereby stem or turn their courses, which, to any person acquainted with the effects of running waters in deep ravines or vales, must appear highly ridiculous, inasmuch as the expense must greatly exceed the simple system of assisting the efforts of nature without producing effects equally beneficial. On these grounds, my lines of main drainage will not be found to run straight or direct; on the contrary, I follow the vales of nature, which are almost always marked by the greatest irregularity.

A.
97,190 English.

No 1.
Mr. Langfield's Report on Lough Gara District.

In this district, those irregular veins or ventages are particularly numerous, on account of the great tracts of bog being broken here and there by intervening islands, which with the great advantages of easy access to the interior of the chief part of it, and the manures which the surrounding country and intermixed lands afford, render it peculiarly adapted to answer all the expectations of bog improvement. And on the making of actual experiments, I would recommend them to be commenced on this district, in preference to any bogs that have come under my observation.

INTERNAL LAKES.

A. R. P.
464. 3. 22. English.

THERE are many of this description, the chief of which are Lough Glyn Lough, Cloonacally Lough, Errit Lough, Orler Loughs, Cloonagh Lough and Lougheluyn Lough, of which the Orler Loughs are by much the most considerable, containing 287 acres. These Loughs, with several smaller ones, are all situated at the west end of the district. There is also near the centre of the district another Lake called Lough Bally, which is a principal supply to the Breeogue river as before-mentioned. On the first view of the district, I conceived it might be desirable to drain those Loughs altogether; but on taking the general levels of the country, I found they were placed in such low situations, and the natural ventages of them running so sluggish for some miles, that I gave up the project of their complete drainage; and therefore, the necessity of taking their soundings (even were boats to be had) was done away. However, where the effects of the superabundant water from the lakes were likely to prevent or retard the drainage of the low bottom grounds along the streams of the district, I have, in such cases, provided for the lowering of them, so far as to remedy the ill consequences of floods. The only internal Lough which may be lowered without much considerable expense is at Cloonacally; and this Lough I have proposed to lower 9 feet (see Section, No. 3.) in order to complete the drainage of the adjoining bogs and bottoms, which in winter-time are covered by its overflow, to the extent of near an hundred acres from the pipe at Cloontowart to Cloonacally.

It may not be improper to remark here, that the lowering of these Loughs, with the rivers and streams connected with them, will not only effectually drain the bottoms and boggy grounds on their verges and under the influence of their waters, but will by doing so, enable the practical bog improvers to put out immense quantities of red manuring ashes, which can be had by burning these black boggy bottoms and veins that are *now under* water, and which, from their general situations (running mostly in the interior where gravel cannot easily be had) are doubly valuable, by affording this good species of manure, where no other sort can be substituted without great expense.

The rivers and streams of this district, almost invariably run in narrow veins of Black bog, through the interior of the Red bogs, and it frequently happens, that those veins of Black bog, although always lower than the Red bog on each side (as before accounted for) are nevertheless generally the deepest, as appears by Section, No. 1. which describes the Black bog at the river, near Cloonagh lake, to be a depth of no less than 31 feet, whereas the Red bog on either side the river, is not above half that depth, although rising rather suddenly many feet higher. Another example of the extraordinary depth of those veins of Black bog may be seen in Section, No. 2. near Aughaduffin bridge, where it is 35 feet deep, being nearly the greatest depth I have found in any part of this district.

The under-stratum of those deep black bogs is usually marle of the finest kind; however, being at such a depth below the rivers running through them, precludes the possibility of raising it to the surface for the purposes of manure.

TURLOGHS or WINTER LAKES.

IN addition to those constant Lakes, there are another description called Turloughs, which although very extensive sheets of water in winter are generally dry in summer, and many of them turn out in a good season to be the best meadows in the country. These Turloghs, and the causes of them are almost peculiar to a few counties in the West of Ireland, and, I believe, are never found in any but limestone countries, where the strata are porous, and consequently in a season of moderate wetness, are sufficiently able to carry off the surface waters by innumerable gullies, swallow holes, &c.; but these ventages being inadequate to the passage of floods, become choaked with weeds, hay, turf, mould, &c. through which the waters have to make their way by mere soakage, till the whole is slowly absorbed, which in some instances does not happen for many months; indeed, I have got great reason to think, that the greatest Turlogh connected with this district will never dry up by the natural ventage of the gullies, being so completely choaked this year (1811), that in the month of August last, there were near 380 acres under water, which shall be particularly noticed in the following pages.

A. R. P.
615. 2. 5. English.

A. R. P.
275. 1. 19. English.

Of these Turloghs, there are two of considerable magnitude connected with the districts; one is situated between Feagh and Curragile near Lough Glynn, and contains about 170 acres; and the other is situated at Mantua near Elphin, and contains 380 acres, as before alluded to. The first of these Turloghs proceeds in some degree from different causes than those to which the generality of Turloghs may be attributed, which are usually occasioned by an accumulation of flood water falling from the surface of adjoining high lands, and deposited in a low valley, hemmed in on all sides; but with respect to this particular Turlogh, it is produced by the stoppage in flood time, of certain subterraneous passages under its surface,

surface, through which passages in a season of moderate drought, the rivers from Cloontowart bridge, and from the mill of Corrigeen-a-gruckawn are supposed to make their way. It is before mentioned, in treating on the sources of the river Lung, that the stream from Lough Oller to Cloontowart, and the stream from Aughadufin and Silverfield run subterraneously for a considerable distance and rise about the bridge of Feagh, where they unite; and form one river to Crenane; it is therefore owing to the insufficiency of the subterraneous passages of these rivers, that causes the waters to force a passage upwards through the surface in flood time, and deluge the whole extent of this Turlogh, which, however, is generally dry in summer, and yields an abundant crop of meadow or pasture, provided it escapes the Lammas floods.

Nº 1.
Mr Longfield's Report on Lough Gara District

The other Turlogh at Mantua proceeds from the usual effects of floods, and the rising of small streams which discharge themselves into it, and which in the summer time finds vent by the numerous gully holes which are scattered through the whole of its surface; however, the last year's experience sufficiently proves, how little those ventages are to be depended on; for in the month of August (1811) the whole of this 380 acres of Turlogh (which if kept dry would be worth 50 shillings per acre) was completely covered with water, which compels the inhabitants to resort to boats in going from one part of their dry land to another, and it was the general opinion of the country, that the swallow holes were so completely choaked, as never to admit a free passage for the waters to run off again; this assertion, considering the two or three streams constantly running into the Turlogh, (one of which comes from the tail-race of Balady corn mill) to me appears probable, and induces me to think, other ventages besides those gully holes are actually necessary. I have therefore laid out a line of a main tap drain through the bog of Mantua from the Turlogh, which I trust will not only effectually drain the bog, but will also prevent the recurrence of a continued flood. The particulars of this proposed line are given in the description of the 7th or Mantua division of the district.

ROADS.

THE whole of the country from Frenchpark to Boyle, Carrick and Elpbin, being composed of the finest limestone in quarry and gravel, it is not an extraordinary circumstance to find the roads between those points of the best description. But as the west end of the district from Frenchpark to Castlerea, Ballinlough, and Ballaghadereen is chiefly a tract of bogs interspersed with land, the cross roads are in many cases in a bad state, particularly where they pass through deep Red bog containing internal springs, which have not been cut off by the road drains.

Indeed, I think, the badness of bog roads generally proceeds from three causes. First, in laying out the bog road drains, which according to presentments, are generally made five feet deep, and six feet wide these drains are always formed to a fixed depth, without paying any regard to the undulations of the surface, instead of increasing the sinkings through the higher parts, so as to preserve a gradual fall for the waters to their several discharging points; the consequence of this neglect is, that every little hollow of the bog contains a lodgement of water, which soon becomes a slough, and the road is rendered impassable. Secondly, in erecting small bridges on bog roads, it is too often done without attending to the nature and depth of the foundation, consequently the bridge sinks, and the arch being stopped, the road is cut across by the running stream.

There are two instances of this near Lough Glynn, one on the road to the town of Ballinlough, and the other on the road to the town of Ballyhaunis. The one on the Ballinlough road is built in wet bog 22 feet deep, the bottom of which, I think, is at least 15 feet below the foundation of the bridge, consequently it has sunk, so that the suffet of the arch is below the bottom of the side drain. Thirdly, the new bog roads are generally gravelled before the bog sufficiently subsides, and are opened for public use too soon, by which means the bog stuff is soon worked up through the thin coat of gravel; these circumstances, together with the common practice of bogging flax in the road drains, by which a head of waters is raised across the road, are the never-failing causes of destruction to bog roads, and a heavy expense to the country. In this western end, as well as the district in general, I have laid out many lines of proposed bog roads, which will not only open communications across the country, but will be most essentially necessary for the transport of gravel to the interior of the bogs, where the benefit of water carriage cannot be extended. These bog roads, I propose, should be generally made between two parallel minor drains, ten perches asunder, and to be twelve feet wide on the gravel, which, I calculate, may be done exclusive of drains, for 6*s*. 6*d*. per perch.

IMPROVEMENTS.

ON the subject of Bog Improvements, little or nothing of importance has been effected; however, some successful experiments have been made, which I shall particularize in my detailed Reports.

Dean French has cut some good drains in the bogs of Killnemanagh and Carroreagh, and has improved a considerable extent near the demesne of Frenchpark, which now produces good meadow and pasture.

Mr. Irwin of Camlin, having lately got a large tract of bog at Breeogue, &c. has commenced improvements by laying out a new line of road from Breeogue to Camlin, and by

N° 1.
Mr. Longfield's Report on Lough Gara District.

cutting a number of double drains about three feet deep, the space between which being about twelve feet, he has planted with Birch, Scotch Fir, Ash, &c. &c. as particularly detailed in the 8th division.

Mr. Owen O'Connor of Ballinegar, has also made some small experiments of bog improvement some years back, the expense of which, *including gravelling*, cost him about £.6. per acre, and the piece thus reclaimed is a good bottom pasture to this day; it however now begins to throw up rushes, and will require to be again broken or limed to destroy their growth.

There are other successful experiments made by both the gentry and farmers of the country, which shall be particularly noticed when treating of the respective divisions in which they are situated.

However, as a general observation, I shall here mention the particular result of some improvements made by Lord Dillon's cottagers at Aughalour near Lough Glyn, which being done by *persons unaided by capital or scientific knowledge*, proves beyond a doubt, that where personal skill is accompanied by the aid of both, the result must be equal to the expectations of the most sanguine, particularly if the operations are carried on in situations equally favourable as that wherein the improvements alluded to have been effected, and which, in the greater part of this district, are frequently to be met with.

The bog where these improvements were effected, lies on the south side of the road from Lough Glyn to Castlerea, and joining the lands of Augbalour, which it must be observed, is a hill of the finest limestone in the country, and where the only limestone quarries are to be had in that neighbourhood; it is therefore not surprising to find subterraneous communications round the verges of those lands, being composed of porous limestone rock and gravel. At the foot of this hill Lord Dillon laid out a certain portion of Red bog in lots for his labourers, which was granted to them rent-free (a well adjudged and great stimulus to improvement) ten or twelve years ago. They commenced by building cabins in the driest part of the bog next the land, and by cutting away the bog as fast as their means would admit. During the progress of these operations, it was discovered that the under-stratum being about eight or ten feet below the surface, was composed of limestone and gravel of the best description, suited to the purposes of bog improvement; it was therefore suggested that *Pits* should be made in the bog for the purpose of raising this manuring gravel to the surface, which was accordingly adopted, and the system continued with such effect that they have now completely reclaimed ten or twelve acres, which, from being as bad sponge bog as any in the country, now produces as good crops of potatoes, oats and hay, as any upland in the neighbourhood. The part thus reclaimed, was originally from four to eight and ten feet deep, the chief of which the improvers cut away for turf before they commenced gravelling the surface; but finding that operation too slow, they are now determined to gravel the natural surface of the bog *after being drained*, which some of the most intelligent of them assured me they had no doubt would succeed.

In this place I must beg to mention a circumstance, proving my former opinion of the retentive nature of Red sponge bogs, which is simply this, that on making the pits before mentioned to raise the gravel from under the bog of Aughalour (the surface of which was, in its state of nature, as wet as any other bog) it was found, after passing with difficulty through five, six or eight feet of bog and water, that on raising the first shovel or two of gravel from the bottom of the pit, the whole of the water which the hole contained immediately disappeared, and that so long as the bottom of the pit was kept clear of bog stuff it remained quite dry; *but* if, on the contrary, there remained only *six inches of bog stuff* in the bottom of the pit, it was sufficient to retain all the waters received by it.

Fiorin grass, constantly cultivated.

It is with much pleasure I have here to remark, that although this part of Ireland is very backward in improved agricultural pursuits, I had yet the satisfaction to find that Doctor Richardson's system of Bog Improvements has been long anticipated by almost every poor tenant in the islands of Clooncagh, Cloonagh, &c. &c. belonging to Mr. French, at the former of which islands I was gratified in viewing a specimen of fiorin grass cultivated on Red bog above 20 feet deep; this piece of bog after being drained and levelled, got a sprinkling of gravel, and was sown with cabbage seed two years ago; last year it was planted with potatoes, which being dug out, was in spring of the present year (1811) laid down with fiorin strings, exactly in the way recommended by Doctor Richardson; the whole piece under the grass contains 33 perches of bog, which has this year produced no less *than two tons* weight of hay, which, as the common people of the country say, is better for horses than hay and oats, and will fatten a beast much sooner than any other kind of forage which they are in the habit of using in that country. This circumstance (was any additional evidence necessary) at once proves that the Red bogs may all be reduced to tracts of profitable pasture and meadow, and in many cases may be applied to the produce of oats and potatoes, if gravel can be had from the under-strata, as at Aughalour.

It is a pleasing circumstance to remark, that the great tracts of bogs in this District, particularly from Castlerea to Ballyhannis, and from Lough Glyn to Ballagbadereen, &c. are, on the whole, equally as well circumstanced as Aughalour bog (see the map); and it must also be remarked, that owing to the intersection of numerous natural outlets, and the ample falls of almost every bog, there will not be occasion for the adoption of any very deep and expensive tap drain to carry off the waters collected by the minor drains; it will, however, in almost every case, be necessary to improve the fall of those natural outlet streams by scouring

N° 1.
Mr. Longfield's Report on Lough Gara District.

scouring and widening them in sundry places, and in some instances, such as at Orler and Aughaduffin bogs, &c. where the streams are so entirely choaked as to create a mass of shaking scraw and slough, it will be necessary that they should be opened by entire new cuts, giving such ample vent to the waters as may reduce the ground and bog on both sides to a state of consolidation.

Although this part of the country is intersected with numerous streams and rivers, yet being only the sources of the *Suck and Gara*, they are not of such magnitude as naturally to afford internal water communication to any considerable extent, except through the lakes. However there are many parts of them, particularly the streams from Lough Orler, Lough Errit, the Aughaduffin, and Silverfield stream, with the Lung and Breeogue rivers, which from their very sluggish falls, and the nature of the soil through which they run (being mostly Black bog) can be easily converted into lines of navigation for flat bottomed boats; and as these streams require to be of more than ordinary breadth and depth to pass the great influx of waters falling into them, I have at once estimated the expense, where necessary, of widening, deepening, and in most cases shortening by entire new cuts, the different courses of those rivers, so as to admit the passage of boats in from three to five feet water, according to the drought or wetness of the season. It must however be remarked, that these lines of proposed navigable streams are in the lowest situations of the country, and therefore cannot benefit the interior of the high Red bogs, either for irrigation or navigation; and therefore roads and the under-strata of themselves, are the only resources for diffusing a supply of the necessary manures, without which, as I before observed in my report of the river Brusna district, *the nature of the Red sponge bog can never be effectually changed.* The principal part of this district, where the loss of internal navigation and manuring gravels will be most materially felt, is in the great bog between Frenchpark and Castlerea, which being one of the highest bogs in the country, does not afford a supply of water sufficient for a canal or irrigation stream, nor does the under-stratum of the bog or the adjoining land, particularly along the verge of Tully, Bashck, &c. &c. afford any thing better than poor hungry sand or mountain gravel; however, the lands of Cloonshanville, Leitrim and Cloonana, in the north and west sides, afford abundance of excellent limestone rock and gravel, which may be conveyed to the interior by the lines of central and cross roads, which I have marked on the map, and which are taken into estimate.

The bog of Castlerea and Frenchpark, being the largest unbroken tract in the District, and varying considerably in its levels (being as undulating as the surrounding country), I have taken a promiscuous longitudinal line of section nearly through the centre, from Cloonshanville to the bog of Moor near Castlerea, in order to show the great height and various summits of its surface, as described in Section, N° 67.

Along this line I have laid out a proposed central road between two parallel lines of main drain from Cloonshanville (where there is an inexhaustible supply of limestone) to near Castlerea, with off branches, to points where the best materials may be had, being the only system I am able to devise for the subsequent improvement (after draining is effected) of that extensive tract, which, for the want of convenient materials, is more disadvantageously circumstanced than any other part of this District. There is a remarkable fact with regard to this bog and the bog of Ballyglass (from which it is only divided by a ridge of land, called Tully, about one-third of a mile in breadth) that, notwithstanding their contiguity to each other, the summit of the latter is above 100 feet below the summit of the former. The lowest bog is much deeper, excessively wet and shaking.

See Section, N° 67.

Considering the subject in general, I have not met any country where the reclaimage of bog could be carried on with such prospects of success, or with such superior advantages, as this District affords; and therefore the system of drainage, which I have the honour to recommend to your consideration, will, I trust, be found simple and practicable, and not exceeding the bounds of moderate expense, when compared with the great benefits to be expected from reducing this part of the Bogs of Ireland to a state fit to receive agricultural improvements.

It is impossible, in so great an extent of district, containing bogs so different in their circumstances and capability of drainage, to lay down any precise system, applying equally to all bogs, whether *high, low, deep, shallow, wet* or *dry*; all which considerations must be distinctly attended to in carrying on the proposed works with œconomy and effect. However, as it is necessary to give some general idea of the proposed system I mean to recommend, I shall here briefly state that plan which appears to me best calculated to attain the desired object.

First, the natural ventage streams and cushes of the bogs should be opened, so as to discharge the waters drawn to them by minor and surface drains; but how far the sinkings of those streams and cushes are necessary, or can be effected, is only to be determined by the section of each particular line where the fall of the whole is ascertained; and therefore the sinkings of each line must depend on the level of its local discharging point. No distance can be named as the space between these lines of ventage; but whenever they naturally occur, they should be opened and improved; therefore they may be called the first class of main drains, or natural ventage.

The second class are main drains laid out pretty central in the lowest vales of the wettest parts of the bogs, and also lines of catch-water or land drains, the sinkings of which in general will be from seven to ten feet; some of these may be converted into navigable cuts for conveyance of gravel, &c.; but as they are only to be adopted where necessary, they cannot be laid out at equal distances.

Mr. Lo[illegible] Report on Lough Gara District.

The third class are minor drains, six feet deep, nine feet wide, and three feet at bottom, laid out generally at about forty perches asunder, and falling into the main drains and outlet streams, in such directions as to obtain the best fall of the surface. Where the bogs are deep and wet, I propose that cross minor drains should be cut parallel to, and about forty perches from, the main outlets, so as to cut up the bogs in patches of about forty perches square, or ten acres each; which patches, I propose, should then be divided into four parts by the fourth and last class, called surface drains, as recommended in my Report of the river Brusna District, subdividing the said ten acres into parallelograms of 2½ acres each, which, I am inclined to think, will turn out to be the average of the whole of the bog divisions when effectually drained. In this district, where the bogs differ so much in circumstances of wet and dry, shaking and firm, I have found it expedient to estimate this part of the system by the acre at 16 shillings, averaging the whole surface drainage at 80 perches for every ten acres at two shillings per perch; which price will not only include the making of the drains in the first instance, but will be sufficient to defray the expense of scouring for the first three years.

These last descriptions of surface drains I recommend to be the same as mentioned in my former Report, namely, perpendicular drains, four feet wide, four feet deep, and four feet at bottom; and the second and third classes I propose to be three feet at bottom, with battered sides, rising at the rate of six inches to a foot on each side; so that a drain, when ten feet deep, will be thirteen feet wide at top, and three feet wide at bottom. Widening on the top, at the rate of a foot in breadth for every foot in depth of the first class, must all depend on circumstances, and therefore no particular scale can be laid down for them.

In my Report of the Fifth District, where the average depth of the bogs is 25 feet, I recommended the third class or minor drain to be made eight feet deep; but as the bogs of this district are in general much shallower, drier, and more numerously intersected by natural ventages, I have on consideration deemed it advisable to reduce the minor drains to a depth of six feet, which I am convinced will be as efficacious in the bogs of Roscommon and Mayo, as eight foot drains in the deep bogs of Allen.

Bog bridges stand well.

In addition to this system of communicating Bog bridges (as recommended in my last Report), formed by leaving about five or six feet of the line of bog drain uncut, at intervals of every 20 or 30 perches, through which a passage for the water is perforated on a level with the bottom of the rest of the drain, and this can be done without incurring any additional expense. On my last survey, I have seen some of these bridges in the bog of Croghan, which have lasted in a perfect state these 20 years, and were as good at that time as when they were first formed. I need scarcely add, that the system of screen planting, also before recommended, might be here adopted with equal advantages, particularly if due regard is paid to the proper aspect on which they are laid out.

It may not be improper here to remark, that the population of the county of Roscommon (although generally considered as a grazing county) is exceedingly great, so much so, that every little island or peninsula in the bogs, contains more than an ordinary proportion of inhabitants; as an instance of which, I shall mention one island near Lough Glynn of 107 acres, called Cloonboiny, that contains no less than 21 families, being little more than five acres to each house, and for which they pay a rent of not less than 40 shillings per acre. It is therefore not to be wondered at, that multitudes of those poor peasants emigrate annually to England, where by two or three months hard labour, they are enabled to save the rent of their little farms at home; and I must say, such is the want of employment for the poor in this part of the country, that I never met men who would go farther or labour harder for a shilling than Connaught men; nay, it is a fact, that some of the attendants who were with me on the survey, declared they had not the like opportunity to earn money for many years before, although the hire did not exceed 1*s.* 8*d.* per day. In an agricultural point of view, there can be no hesitation to acknowledge the advantages resulting from the reclaimage of bogs, particularly where the under-stratum, in their natural state of wetness, does not exceed a depth of from 10 to 20 feet, which by the effect of drainage may be reduced at least one-third, bringing the surface down to within 6, 8 or 12 feet of the gravel, which if porous, (as at Aughalour) can with little difficulty be raised to the surface, there being no impediment by under water. In a political point of view, I am aware, the advantages are equally great, and they may be thus explained: First, by reclaiming the bogs, you increase the profitable soil, and thereby multiply its inhabitants; Secondly, the improvement of these extensive tracts, affording labour to the population, will draw their attention from carrying on the illicit trade of distillation, which is now a disgrace to the country in general, and a serious loss to those fair dealers who are not concerned in it; and, Thirdly, the proposed improvements will make open and accessible at all points those districts wherein such illicit trade is carried on, and thereby do away the great inducement to private distillation, namely, the difficulty of access to the interior, where the corn is manufactured; what the full extent of this trade amounts to, or how far the revenue of Ireland is injured by it, I am not prepared to say; but this much, I verily believe, that in the County of Roscommon, nay, I might say in the whole province of Connaught, there is not one gallon of licensed spirits in every hundred gallons of its consumption, which together with

with the immense expenditure in vainly endeavouring to prevent it, may be a proper subject of inquiry for those persons whose duty it may be to equalize the burdens of the nation.

N° 1.
Mr. Longfield's Report on Lough Gara District.

In making those general observations, I trust, I may not be accused of straying from the particular subject to which my attention should be directed, being of opinion, that the more the advantages of Bog drainage can be fairly demonstrated, as tending to promote the general prosperity and resources of the kingdom, the more fully will the objects of the Inquiry be satisfactorily attained.

I shall however, not trespass on you with any further digression on the subsequent benefits of Bog drainage, but will proceed to report on the local circumstances and capability of the bogs of this District, in such order as the nature and situation of them will admit, for which purpose I have divided the whole of the bogs into Eleven Divisions, beginning at the north-western extremity in the vicinity of Lough Orler, and proceeding through the whole according to the following

I N D E X.

Divisions.	N^{os} of Sections, referring to the Map and Section Book	DENOMINATIONS.	Pages where treated on in this Report	Contents, in Plantation Acres			Contents, in Statute Acres.			Estimated Expenses for Drainage, &c. of each Division		
				A.	R.	P.	A.	R.	P.	£.	s.	d.
1.	1 to 21 inclusive.	Bogs north of the road from Annagollagh bridge to Errit, and extending to Orler Tavrane, Cullagh, Lissadaly, &c. &c. - -	40 to 70	5,256	3	0	8,515	0	9	20,534	19	9
2.	22 to 38 inclusive.	Bogs west of the road from Cloonallis to Carrobeahy, extending to Ballinlough, Cloonkan, Taghnarra, Armeashel, &c. - -	71 to 86	3,857	1	0	6,248	0	18	12,826	15	5½
3.	39 to 52 inclusive.	Bogs east of the road from Cloonallis to Carrobeahy, extending to Ballindrimly, Kilgorrive, Loughglyn, Cloontowart, &c. - -	87 to 115	4,152	1	0	6,725	3	34	14,118	16	3½
4.	53 to 64 inclusive.	Bogs on both sides of the river Lung, from Cloontowart bridge to Lung bridge, and extending to Ballaghaderreen, &c. - -	119 to 133	2,103	0	0	3,406	2	2	6,223	17	0
5.	65 and 66.	Bogs of Leitrim, Cloonfad, Fairymount, Cluggernagh, Mullin, &c.	137 to 144	1,600	0	0	2,591	2	38	2,821	0	0
6.	67 to 78 inclusive.	Great Bogs of Frenchpark and Castlereagh, extending to Tully, Baslick, &c. and including the low Bog of Ballyglass - -	147 to 161	4,275	0	0	6,924	3	6	15,817	10	7
7.	79 to 88 inclusive.	Bogs from Bella to Mantua, and extending to Ballynegar, Cloonshanville, Frenchpark, &c. &c. -	165 to 183	3,459	2	0	5,603	3	11	9,807	16	1
8.	89 to 96 inclusive.	Bogs on each side Breeogue river, and extending to Kilnamanagh, Knockglass, Camlin, Lacken, Lugnaguir, &c. &c. - -	187 to 205	2,341	1	0	3,792	1	30	6,422	13	2
9.	97 to 104 inclusive.	Bogs north and south of the river Lung, extending from Lung House, and near the town of Ballaghdereen, to Lough Garra, &c. - - - - - - -	209 to 225	2,322	0	0	3,761	1	2	7,650	12	7
10.	105 to 108 inclusive.	Croghan Bogs - - - -	229 to 237	466	0	0	754	3	14	1,574	16	5
11.	109 to 111 inclusive	Drimer, Drummin, and Ballinville Bogs - - - - - -	241 to 247	588	1	0	952	3	19	1,551	10	5
		TOTALS - - -	- -	30,421	1	0	49,277	1	23	99,350	7	9

Nº 1.
Mr. Longfield's Report on Lough Gara District.

A. R.
5,226. 3.
Irish measure.

FIRST DIVISION, or Bogs north of the road from Annagollagh bridge to Errit, and extending to Orler Tavrane, Culliagh, Lissadaly, &c. &c. containing A. 8,515. 0. 9. English acres.

THIS great and largest Division of the District, is composed of numerous parts of one general mass of bogs situated on and near the summit of the sources of the river Lung, one of which running from Loughs Errit and Orler, meanders through these bogs for a distance of above six Irish miles to Cloontowart bridge, as described in Section, No. 1.

The other source of the Lung, called the Aughaduffin and Silverfield stream, also forms a principal feature in this division, running from Corgorrive to Corrageen-agruekaum, when it sinks into a subterraneous passage of limestone rock, as described in Section, No. 2.

These two rivers are the great passages for the waters of this division, which together with the means they afford for an internal water communication, have induced me to make two separate sections of them, in order that their capabilities may be sufficiently ascertained and described. I shall therefore begin with the line of river from Cloontowart bridge to Loughs Errit and Orler, (see Section, No. 1.) In levelling this river from the bottom of Cloontowart bridge (which I find to be 36 feet 6 inches above surface water of Lough Garra) I find the rise from that point to Cloonagh Lough, to be only 3 feet in a distance of two miles and a quarter, and which rise is chiefly attributable to three or four fordable spots under Mr. Sandford's at Derry, which should be removed; by this means Cloonagh Lough (which is above a mile long) would be lowered three feet, which will not only dry the low profitable verges from the bridge to the lake, but would also materially contribute to the same effect on the whole line of river above the lake to Orler bridge. The drying of these verges of the river will considerably increase their value (being at present little better than shaking quagmire of Black bog, some spots of which are 31 feet deep) and induce the persons employed in the future improvements to fix their residences on them, as the means of making further inroads in the Red bogs; certainly there can be no situation better suited to such purpose, having an abundant supply of fuel and water, and also where gravel can at any time be conveyed by boat from Cloonagh, Cloonkagh and Derry, and where there can be immense quantities of red ashes produced from the great vein of Black bog.

Continuing the course of the river from the north end of Cloonagh lake to Orler bridge, it will be found to run very sluggish, having a fall between those points of only six feet in a distance of near three miles; this fall is chiefly at Orler, where there is a small eel weir across the river; from Orler bridge to Orler Lough is a dead level 45 feet 6 inches above Lough Garra, and from the said bridge of Orler to Lough Errit, the rise is but three feet more, or 48 feet 6 inches above Lough Garra; so that the whole fall of this river from Lough Errit to Cloontowart bridge is only 12 feet, being little more than 18 inches to an Irish mile.

The improvements proposed on this river are as follow: First, to remove the fordable spots at Derry and Cloonkagh, so as to lower Cloonagh Lough 3 feet: Secondly, to shorten, widen and deepen by various new cuts the windings of the river from the north end of Cloonagh lake to Orler bridge, and to Lough Orler, so as to lower it three feet more; and also to cut an entire navigable line from the said Lough Orler to Lough Errit, forming a running canal between the two lakes, which is proposed, should also lower the said Lough Errit four feet; by this means, these three great lakes will be reduced from three feet to four feet below their present summer water; and the rivers between them will form a line of running canal for several miles connected with the lands of Orler, Cloonagh, and Cloonkagh and Derry, all which (particularly Orler) afford a most abundant supply of limestone and gravel of the best quality; lastly, in aid of this river navigation, I propose a dam, with a suitable sluice, should be built across the river at Derry, in order that in dry seasons, a proper head of water for navigating gravel boats, may be raised and thrown back up the river as far as occasion may require.

There is at present, the remains of a rampart at the point of Derry, under Mr. Sandford's house, which I propose to take advantage of. This old rampart, I am informed by Mr. Sandford, had been used probably so far back as two or three centuries, for the purpose of carrying on iron works, the remains of which, together with the usual clinkers are visible to this day.

The whole country being at that time underwood, it is presumed, the fuel used on the works, was principally timber and charcoal.

The Aughaduffin and Silverfield stream, which as before mentioned, is the other principal source of the river Lung, is formed by the streams from Corgorrive, Cloonfanliss, &c. &c. and runs to the bridge of Culliagh, Aughaduffin, Silverfield and Carrigun-agruckaun, when, after supplying a corn-mill, it sinks through limestone quarries, as described by Section, No. 2. This stream is also similarly circumstanced with the before mentioned one from Lough Errit. It is quite a dead water from the mill to Silverfield, and runs exceedingly sluggish from Silverfield to the bridge of Culliagh, above which it is so crooked and choaked, that it will require an entire new cut, as described by the section.

This stream also affords inducements for internal navigation for the conveyance of limestone and gravel from Carrigeen-agruekaun; and therefore I propose adopting the same

system

Nº 1.
Mr. Longfield's Report on Lough Gara District.

system of improvement as recommended for the other source of the Lung from Lough Errit to Cloontowart bridge.

In addition to the lakes of Errit, Orler, &c. which I have had occasion to mention as connected the stream from Lough Errit to Cloontowart bridge, there are several other internal lakes in this division, the chief of which is Cloonacally Lough, containing 220 English acres. This lake is at present 7 feet 6 inches higher than Cloonagh Lough, and 10 feet 6 inches above the bottom of Cloontowart bridge, and is the supply to Derry corn-mill belonging to Mr. Sandford; this mill, by keeping a constant high head of water in the lake, is the occasion of throwing a constant flood of water on near 80 English acres of the bottom ground of Curraghard and Cloontowart, and also overflows the Red bogs in winter, on each side the mill stream; therefore, in order to effect the drainage of these bogs and bottom Curraghs, it is absolutely necessary to lower the lake, but this cannot be done, without cutting off the supply to the mill. I am, however, of opinion, the advantages to be derived from lowering the lake would more than three times repay the annual value of the mill, which at present produces but £. 30. per annum to Mr. Sandford, besides which, the mill is in exceeding bad order, so much so, as to require rebuilding.

The advantages to be derived from lowering the lake are, First, the complete drainage of about 80 English acres of bottom, which if drained would produce three times the rent of the mill; Secondly, it would facilitate the improvement of about 100 English acres of Red bog on each side the mill stream, which at present is but about 2 or 3 feet above the level of the lake in summer time; and, Thirdly, by lowering the lake, you would consequently recover a quantity of land round its shores, and give access to the limestone, gravel or marl, with which (judging by the surrounding country) it is reasonable to suppose it abounds.

To effect this desirable object of lowering the lake, I propose bringing up a tap drain from the river Lung, below Cloontowart bridge, along the edge of Cloontowart bog to the small pipe on the road, where I propose a bridge should be built of 10 feet span, the bottom of which should be six feet lower than the present very insufficient pipe, which is but 3 feet 9 inches wide from this point (which may be considered as the main obstruction to the drainage of the land and bog above it). I propose to bring up a main tap drain to Cloonacally, at about 9 feet, sinking to the point A. which is within sixty perches of the lake; along this sixty perches, I propose to cut a similar tap to the lake, which will lower its surface about nine feet below the summer level, as described in Section, No. 3.

I prefer this Line of tap drain rather than the present mill stream, which running chiefly through clay and gravel would be more expensive, without effecting the great object of draining the eighty acres of Curragh, which this proposed line will accomplish to the fullest extent. From the point A. above mentioned, I propose to continue a line of main drain under the lands of Curraghard, and across the bog to Silverfield, and continuing same between bog and land till it falls into the main river at the point B. as described in Section, No. 4.

It is impossible to treat on so large a portion of bogs as this division contains, without subdividing and naming separately each particular bog which is comprehended therein, according to the natural divisions of the country; and therefore, to prevent confusion of names as much as possible, I shall in this place describe the existing circumstances and proposed improvements of the great bog of Silverfield, Cloonacally and Tullyganny, containing 1,394 English acres. This portion is bounded on the west side by the Lough Orler stream, and on the east by the Aughaduffin and Silverfield stream, both of which are nearly on the same level, having scarcely any perceptible fall (as described by Section, No. 2.) and being on an average 20 feet wide, and from 4 to 6 feet deep.

In this bog is situated a small lake nearly midway between the rivers, but the level of which is twelve feet above either. This lake (which is the bounds between the counties of Roscommon and Mayo) appears like a great cistern (without any visible ventage) in the centre of the bog, and receives a considerable portion of its surface waters, which it maintains on a level of twelve feet above the outlet stream from Lough Orler, although separated from it by only a ridge of shallow bog about eighty perches wide.

There are few bogs that afford so great a variety of surface as these 1,394 acres, or are so well circumstanced for effectual drainage, having on each side, boundary rivers lying more than 30 feet below the summit of the bog, which rises very abruptly from the verge of said rivers: However, the declination is by no means regular from the centre to the margin of the lake or rivers; and therefore I have found it necessary to lay out a main drain through the centre of the vale of deep Red bog, that runs from the small Lough before mentioned to Cloonacally Lough (see part of Section, Nº 5.). This main drain will carry off the waters from some of the highest parts of the bog, which is chiefly of a mountainy description, of from three to five feet deep, and which, from the many stumps and shrubs on the surface, appears to have been formerly an extensive oak wood, of which there are yet some stunted remains. This part of the bog, having gravel so near its surface, is dry in summer time, and is grazed by the cattle of the neighbouring villagers; and therefore I am of opinion, very little more than the necessary subdividing by minor drains will be sufficient to complete its drainage.

The lowering of Cloonagh Lough would be of material advantage in improving the fall of the boundary river of these bogs to Tullyganny, which being nearly a dead level, is subject to constant floods by backwater from the lake, by which means the verges of meadow

N° 1.
Mr. Longfield's Report on Lough Gara District.

and pasture are in many places little better than shaking quagmires, but which, if drained, would become valuable acquisitions to the resident improvers as before stated. The remarks on the river between the lake and Clooutowart bridge, applies equally here, the circumstances being the same in both cases; of this Subdivision of the Bogs, I have given four Sections; viz. Nos 4, 5, 6 & 7.

Subdivision of Cloonagh, Errit, Gurtagunny, Drummut and Carrobeahy Bogs, containing 1,876 English acres, are situated on both sides of the river from Cloonagh Lough to Cloontowart bridge, and on the shores of the said Lough, the largest portion of them lies between the road at Drummut and the river, and contains 591 English acres. Through this division I have laid out three lines of main drains, each falling chiefly into the river, with a partial fall to the road at the bridge of Carrobeahy. This bog lies well for drainage, having an ample fall on all sides from the centre, where it is but five feet to the gravel (as appears by Section, N° 6.)

The part between Drummut and the river is also of a shallow description of bog, falling from the land to the river, and only requiring a regular system of minor and surface drains falling to the river.

Errit and Gurtagunny Bogs, containing 409 English acres, discharge all their waters into Cloonagh Lough, falling the whole way from the land of Gurtagunny to the Lough.

In the interior of this bog, I have laid out these lines of main drains, and also a long line of land drain, under the hills of Errit and Gurtagunny. (See Sections, Nos 7, 8, 9 & 10.)

There is at present no land drains of any description along the verge of this Bog, consequently the interior of it is very wet and shaking; there is however a fine fall from every part of it, as appears by the Sections. A part of this denomination is shallow and mountainy, and, as it were, overhangs an island of arable and pasture ground adjoining the Lough. On the whole, I find no part of these bogs that are not possessed of every capability for effectual drainage, and the adjoining lands contain in most places a sufficient quantity of limestone and gravel to further subsequent agricultural purposes.

The remainder of this great extent, east of Lough Orler and the bogs of Aughaduffin, Cloonfaulis, Cloongownagh, Tavrane and Orler, contain 2,109 English acres. In the interior and verging, these bogs are the sources of the rivers, which (as before mentioned) bounds the bogs of Silverfield, Tullyganny, &c. &c. and which rivers form the great leading ventages of the bogs on both sides; however, they are so completely choaked and obstructed in numerous places by various impediments, particularly accumulated sloughs, that I have deemed it necessary to propose entire new cuts for the rivers, so as to give complete vent to their waters, and that of the proposed drains falling into them; the particulars of which improvements are described in Sections, Nos 2, 12, 13 & 14. In addition to which, I have laid out a line of Catchwater drain on the west side of Aughaduffin, as described in Section, N° 16. and also a series of minor drains, as marked on the map; all which have most excellent falls to the outlet streams, Nos 2 & 12.

In these bogs, nature has been profuse of the means and materials for their improvement, particularly in parts adjoining Orler and Aughaduffin, and also on each side of the vales of deep Black bog, through which the ventage streams run, towards the river Lung. On the south end of Orler there is abundance of the finest loose limestones and limestone gravel, and on the north side there is scarcely any part that does not afford manuring gravel of the best kind.

In Aughaduffin there is also to be had limestone and gravel; and Cloonfaulis, which is in the centre of the bog, affords the same materials. There are many islands and eskars of running gravel and sand, which, for want of better materials, may be used on the surface of the bogs, and which, although of themselves are both dry and sterile, will, when mixed with bog stuff, be the means of reducing the surface to kindness. In addition to drains enumerated, I have laid out a system of bog roads, which are marked on the map.

Cumber, Crusard, Tully, Cloondart and Errit Bogs, containing 1,793 English acres. These bogs are situated west of Lough Errit, and the stream issuing from it into Lough Orler, and one partly in the county of Roscommon and partly in the county of Mayo; they are circumstanced partly similar to those already treated on, being subdivided by outlet streams from Lough Errit and Lough Nalea, whose courses receive almost the whole of their surface waters; those ventages are however exceedingly choaked by sloughs and scraws, and therefore require to be opened by new cuts as much as any of the streams already mentioned.

The one from Lough Errit to Lough Orler, I have already proposed to make a navigable cut; I would therefore judge it expedient that the stream from Lough Nalea which communicates with it should also be made navigable on the same level, to near Derrymackna, as described by Section, N° 19.

This section commences at the point C, where the stream from Lough Errit forms a junction with the one from Lough Nalea, and continues up the said stream by Derrymackna into Lough Nalea; then crossing the bog to the foot at Cruissard, continues along the county bounds through Loughanimmery and Tully bogs to the high road between Loughglyn and Ballyhewnis. The proposed improvements which this section, No. 19, represents, are as follow, viz. first, to continue a line of navigable drain on the proposed level of the stream

Nº 1.
Mr Longfield's Report on Lough Gara District.

stream from Lough Errit to Lough Orler and to Derrymackna, when the sinking (allowing 4 feet water) will be about 13 feet at the termination of 180 perches of canal from the point of Derrymackna. I would not recommend the navigable cut to be continued on the same level, as the sinking being deep would become too expensive, but I would propose to continue said navigable drain on a level 7 feet higher into Lough Nalea, which it would lower about 9 feet; however, it is presumed, that Lough Nalea is sufficiently deep to admit of navigation for about half a mile further into the lands of Tully, even after its surface should be lowered by the proposed navigation; thus a line of navigable communications for above a mile and a half, commencing and terminating in manuring gravels, would by this plan be attained, and at the same time would operate as a complete tap drain running through the centre of near 1,295 English acres of wet Red bogs.

Section, No. 20, is along the county bounds, from the proposed navigation, No. 19. to Lough Nalea; shewing the highest part of the bog between Cloondart and Derrymackna, which although shallow, is nevertheless saturated by numerous springs rising from the under-stratum, which is chiefly composed of sand. This line I propose to be a main tap drain, falling on the north to the navigation line, No. 19, and on the south to Lough Nalea.

No. 21, is a central line of section through Cumber bog, along which I propose another line of main drain to the point D.

The whole of the east side of these bogs being bounded by the great ventage from Lough Errit to Lough Orler, and the west side being a connected line of high and dry gravel hills without springs, renders it unnecessary to propose any other lines of main tap drains; and therefore with the exception of the minor drains and roads as marked on the map, and the subsequent surface drainage, I have nothing further to recommend in this part of the division. In many parts of these bogs, there are a number of round gravel hills and sloping banks, covered with a skin of bog from 2 to 6 and 9 feet thick.

In Errit bog, there is a ridge of this description across from Derrymackna to Derrynagowna: The latter island has been lately brought into cultivation by a tenant of Mr. French's, who assured me he could easily accomplish the reclaimage of a considerable portion of his bogs if encouraged; but an uncertain lease of three old lives prevented his making any effort of the kind, although the bog adjoining what he had reclaimed is a continuation of fine dry bank with only two feet of turf, interspersed with small pasturable spots. Here the want of permanent interest is an evident preventive to improvement, in which case it cannot be expected any individual will exert his industry. I have laid out a direct line of road from Crossard to Derrymackna, and straight across the navigable line between Lough Errit and Lough Orler, to the high road under the gravel hills of Errit.

ESTIMATE of Expenses necessary to execute the proposed Works on the First Division, or Bogs north of the road from Annagollagh bridge to Errit, &c. &c.

Nº of Section	——	Average Sinking	Width at Bottom.	Width at Top.	Rate per Perch.	Amount.
	STREAM from LOUGH ERRIT to CLOONTOWART BRIDGE.					£. s. d.
1.	To deepening 120 perches, and cutting down the fords at Derry, making the present stream 14 feet wide at bottom - - - -	2.	14.	16.	11/8.	70 10 —
	To building two piers of lime and stone at the old rampart, to be 12 feet asunder, and erecting two pair of framed sluices between same to raise a head of water for navigation purposes - - - - - - -	- -	- -	- -	- -	80 — —
	To making a new cut 36 perches long, to shorten the river near Curraghacinmeen, and make same on a navigation size - - - -	8.	14.	22.	37/4.	67 7 —
	To making 18 perches of similar cut further up the river - - - - - - - -	7.	14.	21.	31/6.	28 7 —
	To making 71 perches of four new cuts near Derryneea - - - - - - -	6.	14.	20.	26/4.	93 9 8
	To deepening 120 perches of the present river between the above new cuts - - - -	2.	14.	16.	11/8.	70 10 —
	To making 80 perches of new cut at Derryneea	8.	14.	22.	37/4.	149 13 4

N° 1
Mr. Longfield's Report on Lough Gara District.

Estimate of Expenses necessary to execute the proposed Works on the First Division—*continued.*

N° of Section	—	Average Sinking	Width at Bottom	Width at Top	Rate per Perch	Amount. £.	s.	d.
	STREAM from LOUGH ERRIT to CLOONTOWART BRIDGE—*continued.*							
1.	To deepening 110 perches of the present stream above Derrynea - - - - - -	2.	14.	16.	11/8	64	12	6
	To making 37 perches of five new cuts, to shorten the river near Orler - - -	8	14.	22.	37/4.	69	4	5
	To making 60 perches of two similar cuts, above and below the small weir - - - - -	6.	14.	20.	26/4.	79	—	—
	To deepening 90 perches of present river, above and below the bridge of Orler - - -	2.	14.	16.	11/8.	52	17	6
	To making an entire new cut, 326 perches long, for the stream between Orler bridge and Lough Errit, on a navigation size - - - -	8.	14.	22.	37/4.	608	10	8
	To dressing down 652 perches of banks, and forming trackways on both sides - - -	- -	- -	- -	5/.	163	—	—
					£	1,597	2	1
	Contingencies and unforeseen Expenses, 20 per Cent. - - -					319	8	5
	Total Amount of Improvements on the Stream from Lough Errit to Cloontowart Bridge, by which near six miles of Navigation may be opened - - - - - - - - -					1,916	10	6
	AUGHADUFFIN and SILVERFIELD STREAM.							
2.	To deepening 320 perches of present stream from the point B. to E. chiefly in Black bog, so as to contain four feet of water in summer for purposes of boating limestone from Carrageenacreeha, &c. - - - - - -	2.	14.	16.	11/8.	188	—	—
	To deepening 356 perches of said stream, from E. to Aughaduffin bridge, through deep Black bog - - - - - - - - - -	3.	8.	11.	10/6.	186	18	—
	To making 207 perches of complete new cut above the bridge of Aughaduffin, to junction with main drain, N° 15. - - - -	7.	6.	13.	19/.	196	13	—
	To continuing said new cut from junction of main drain, N° 15, the whole way to Cloongownagh - - - - - - - -	6.	6.	12.	14/.	257	12	—
						829	3	—
	Contingencies and unforeseen Expenses - - - -					165	16	7
					£	994	19	7
	Proposed TAP DRAIN to lower CLOONACOLLY LOUGH.							
3.	To deepening 70 perches of the present drain below the small pipe north of Cloontowart -	4.	3.	7.	5/2.	19	5	—
	To building a bridge of six feet span in room of the present pipe, whose foundation will be six feet lower - - - - - -	- -	- -	- -	- -	20	—	—
	To 248 perches of main tap drain from the pipe at Cloontowart, by the point A. to the Lough at Cloonacolly (through clay, gravel and bog) - - - - - - - -	9.	3.	12.	11/.	136	8	—
4.	To 241 perches of minor drains from the point A. along the bog edge to Silverfield - -	8.	2.	10.	6/2.	74	6	—
	To 330 perches of minor drains between bog and land of Silverfield to the main river at B. - - - - - - - - -	6.	1.	7.	3/6.	57	15	—

Estimate of Expenses necessary to execute the proposed Works on the First Division—*continued.*

N° of Section.	———	Average Sinking	Width at Bottom	Width at Top.	Rate per Perch	Amount.		
	Proposed TAP DRAIN to lower CLOONACOLLY LOUGH—*continued.*					£.	s.	d.
5.	To 315 perches of central main drain through the bog of Silverfield from Cloonacolly Lough at the point F. to the outlet stream at the point G. where it will partly discharge to the main river, near the cross stick at Derryneea - - - - - - -	9.	3.	12.	11/.	173	5	—
6.	To 212 perches of central main drain in the bog of Drumnant and Carrobeahy, ending at the Ballyhawnis road - - - - - -	9.	3.	12.	11/.	116	12	—
	To 77 perches of additional sinking and widening the present road drain to the outlet stream at Carrobeahy - - - - - -	4.	3.	12.	8/.	30	16	—
	To pulling down and rebuilding the bridge across the road at Carrobeahy, to be three feet lower than the present one - - - - -	- -	- -	- -	- -	20	—	—
7.	To 80 perches of main drain, commencing at the main river near the lake of Cloonagh, and proceeding up present drain to the bog of Gurtagunny - - - - - - -	7.	3.	10.	5/10.	23	6	8
	To 52 perches of main drain in continuation, through deep bog - - - - - -	10.	3.	13.	15/7.	40	10	4
	To 60 perches of main drain in deep bog, and ending under the hills of Gurtagunny - -	9.	3.	12.	11/.	33	—	—
8.	To 189 perches of Catchwater drain, along the south edge of the lands of Cloonagh to the lake - - - - - - - -	8.	3.	11.	7/3.	68	10	3
	To 173 perches of main drain, from near the said Cloonagh Lough through the centre of the Red bog of Carrobeahy - - - -	9.	3.	12.	11/.	95	3	—
9.	To 76 perches of main drain from ditto to the Lough under the hills of Errit, &c. - -	9.	3.	12.	11/.	41	16	—
10.	To 404 perches of Catchwater drain under the hills of Errit and Gurtagunny - - -	8.	2.	10.	6/2.	124	11	4
11.	To 278 perches of main drain from the river at Derryneea, taken circuitously through the centre of the Red bog to near the lake of Cloonagh - - - - - - - -	9.	3.	12.	11/.	152	18	—
	To 92 perches of said drain to the Lough (through deep wet bog) - - - -	10.	3.	13.	15/7.	71	13	8
	To making a new pipe across road at Gurtagunny - - - - - - - -	- -	- -	- -	- -	5	—	—
12.	To making 174 perches of entire new cut for the stream between the bogs of Aughaduffin and Orler (the present one being entirely choaked up), commencing at the main river near Tullyganny, and ending at the bridge on the road between Orler and Tullyganny -	6.	6.	12.	14/.	121	16	—
	To making 454 perches of entire new cut for the said stream from the Aughaduffin road to the lands of Cloongownagh (partly in quagmire) - - - - - - -	8.	6.	14.	20/8.	469	2	8
13.	To 286 perches of main drain in the bog of Tavrane and Orler, from the outlet, N° 12, along a low vein and stream that runs partly subterraneous - - - - - - -	8.	14.	2.	8/4.	119	3	4
14.	To 161 perches of main drain from the point H. N° 12, through Cloonfawlis and Aughaduffin bogs - - - - - - -	9.	3.	12.	11/.	88	11	—
	To 40 perches of main drain in continuation -	8.	3.	11.	7/3.	14	10	—

N° 1.
Mr Longfield's Report on Lough Gara Diſtrict.

Estimate of Expenses necessary to execute the proposed Works on the First Division—*continued.*

N° of Section	—	Average Sinking	Width at Bottom	Width at Top.	Rate per Perch.	Amount.		
	Proposed TAP DRAIN to lower CLOONACOLLY LOUGH—*continued.*					£.	*s.*	*d.*
14.	To 32 perches of D° to junction of land drain at Aughadussn - - - - - - -	9.	3.	12.	11/.	17	12	—
15.	To 219 perches of main drain from the stream at Corgirrive across the Togher, at Cloontawhs, and through the Red bog to Cloongownagh - - - - - - - -	9.	3.	12.	11/.	120	9	—
16.	To 386 perches of catchwater drain, along the west side of Aughadussn - - - -	8.	3.	11.	7/3	139	18	6
17.	To 166 perches of main drain through the great slough under the hills of Orler - - - - N. B. This drain cannot be made until Cloonagh Lough, &c. is lowered according to section, N° 1.	9.	3.	12.	11/.	91	6	—
18.	To 266 perches of central drain from the river at Cloonkagh, through the bogs of Curraghacimmeen and Cloonagh - - - - -	8.	3	11.	7/3.	96	8	6
19.	To 180 perches of navigable drain, commencing at the line, N° 1, and continuing on same level to Derrymackna - - - - - -	11.	14	25.	55/8.	501	—	—
	To 152 perches of similar navigable drain on a level eight feet higher than the former, and running from Derrymackna into Loughanlea - N. B. The above navigable line will lower Loughanlea.	9.	14.	23.	43/2.	328	1	4
	To dressing down banks and forming trackways on both sides of said cuts 664 perches - -	- -	- -	- -	5/.	166	—	—
	To making 10 perches of main drain, commencing at Loughanlea, and running towards the road at Crossard - - - - - -	7.	3.	10.	5/10	2	18	4
	To 60 perches of main drain in continuation -	10.	3.	13.	15/7.	46	15	—
	To 52 perches of - d° - - d° - ending at the road at Crossard - - - - -	8.	3	11.	7/3.	18	17	—
	To 80 perches of sinking and widening present drain from the road to Loughanmmery -	- -	- -	- -	2/.	8	—	—
	To 151 perches of sinking and widening from Loughanmmery to the Mill Lough at Tully -	- -	- -	- -	5/.	37	15	—
20.	To 80 perches of main drain, commencing at the navigation line, N° 19, and proceeding towards Loughanlea - - - - - - -	8.	3.	11.	7/3.	29	—	—
	To 34 perches of main drain in continuation -	9	3.	12.	11/.	18	14	—
	To 86 perches of - d° - - d° - -	10.	3.	13.	15/7.	67	—	2
21.	To 228 perches of main drain through Cumber bog to the point D. - - - - -	9.	3.	12.	11/.	125	8	—
	MINOR DRAINS, &c.							
	To making 700 perches of minor drains in Tully bog, adjoining Loughanlea - - - -	6.	3.	9.	4/8.	163	6	8
	To making 960 perches of minor drains in Cloongownagh and Crossard bogs - -	6.	3.	9.	4/8.	223	—	—
	To making 300 perches of minor drains in Derrymackna bog - - - - - -	6.	3.	9.	4/8.	70	—	—
	To making 970 perches of minor drains in Cloondart bog - - - - - -	6.	3.	9.	4/8.	226	6	8
	To making 2,000 perches of minor drains in Cumber bog - - - - - -	6.	3.	9.	4/8.	466	13	4

N° 1.
Mr. Longfield's Report on Lough Gara District.

Estimate of Expenses necessary to execute the proposed Works on the First Division.—*continued.*

N° of Section.	———	Average Sinking.	Width at Bottom.	Width at Top.	Rate per Perch.	Amount.		
	MINOR DRAINS, &c.—*continued.*					£.	s.	d.
	To making 450 perches of minor drains in Errit bog, adjoining Orler road - - - - -	6.	3.	9.	4/8.	105	—	—
	To making 530 perches of minor drains in Orler bog, both sides of the road - - - -	6.	3.	9.	4/8.	123	13	4
	To 2,230 perches of minor drains in Orler bog to Tavrane - - - - - - - -	6.	3.	9.	4/8.	520	6	8
	To making 2,980 perches of minor drains in Aughaduffin and Cloonfawlis bog - - -	6.	3.	9.	4/8.	695	6	8
	To making 340 perches of minor drains in Corgorrive bog - - - - - - -	6.	3.	9.	4/8.	76	6	8
	To making 380 perches of minor drains in Corgorrive bog and Culliagh bog - - -	6.	3.	9.	4/8.	88	13	4
	To making 590 perches of minor drains in Culliagh and Kilcastle bogs - - - -	6.	3.	9.	4/8.	137	13	4
	To making 460 perches of minor drains in Magherabuy bog - - - - - -	6.	3.	9.	4/8.	107	6	8
	To making 580 perches of minor drains in Lissadaly bog - - - - - - -	6.	3.	9.	4/8.	135	6	8
	To making 500 perches of minor drains in Currasallagh bog - - - - - - -	6.	3.	9.	4/8.	116	13	4
	To making 630 perches of minor drains in Tullygauny bog - - - - - - -	6.	3.	9.	4/8.	147	—	—
	To making 2,100 perches of minor drains in Silverfield bog - - - - - - -	6.	3.	9.	4/8.	490	—	—
	To making 500 perches of minor drains in Cloonacolly bog - - - - - - -	6.	3.	9.	4/8.	116	13	4
	To making 1,400 perches of minor drains in Derryneea bog - - - - - - -	6.	3.	9.	4/8.	326	13	4
	To making 1,000 perches of minor drains in bogs round Cloonagh - - - - -	6.	3.	9.	4/8.	233	6	8
	To making 1,230 perches of minor drains in Carrobeahy and Drummit bogs - - -	6.	3.	9.	4/8.	287	—	—
	To making 540 perches of minor drains in Errit and Gurtagunny bogs - - - - -	6.	3.	9.	4/8.	126	—	—
	To making 900 perches of minor drains in Cloonkagh and Derry bogs - - - -	6.	3.	9.	4/8.	210	—	—
	To surface drainage for 5,256 Irish acres, at the rate of 8 perches, or 16 s. per acre - -	- -	- -	- -	- -	4,204	16	—
	To making 4,160 perches of roads to be 12 feet on gravel - - - - - - - -	- -	- -	- -	6/6.	1,352	—	—
						14,686	4	9
	Contingencies and unforeseen Expenses, 20 per Cent. - - -					2,937	4	11
						17,623	9	8
	Amount of Improvements for the Aughaduffin stream, and the streams from Lough Errit to Cloontowart - - - - - -					2,911	10	1
					£.	20,534	19	9

A. R.
3,857. 1. Irish.

SECOND DIVISION, comprehending the Ballinlough, Clonchamber, Cloonelta, Cloonsuck and Cloonkan Bogs, containing A. 6,248. 0. 18.

THESE extensive tracts, stretching from Annecashel (near Castlerea) to Tully near Ballyhawmis, a distance of 7 miles in length, lie on the south side of the road from Cloonallis by Cloonfower to Tully, and on the north side of the road from Ballinlough to Castlerea; they are intersected by the streams from Lough-cheyn and Cloonkan (two sources of the river Suck), and by numerous other minor streams, veins and cushes, all of which are so many ventages to their respective bogs, the great mass of which, being divided and broken by numerons large fertile islands, command an abundant supply of manuring gravels; however, the higher parts of this portion is not so well circumstanced as the lower lands, in point of internal manures, as there is no limestone to be had from Cloonsuck to Ballinlough, or from Ballinlough to Churchborough, nor is there any considerable quantity of manuring gravels. The bogs between those points approach rather to a description of high, shallow, mountain bog, with an under-stratum composed of large granite stones and poor sandy gravel. The elevations of these particular parts are however very high, rising from 20 to 120 feet above the lake called Lough-eluyn (which is the western boundary of this division, and the chief source of the river Suck), in consequence of which there is no difficulty in effecting their drainage, which very little more than the necessary divisions would accomplish.

The lower parts however, are well circumstanced both in regard to their ventages, and the favourable declinations of the surface, and also in respect to the quantity and quality of the limestone and manuring gravels, which are to be had in all the adjoining lands, and the islands through the interior. There are also great tracts of the bogs, particularly at Taghnana, Cloonelta and Cloonchamber, that are very shallow and resting on good gravel, which the tenantry of Cloonelta have raised to the surface in many places for purposes of improvement.

I cannot pass this opportunity without remarking the particular circumstances of the land and bog of Cloonelta; the peculiarity of the case is, that the land and bog of Cloonelta forms one continued and direct ridge or hill of about a mile and a quarter long, having a fall of 60 feet on the north and 30 feet on the south side, consequently, no stagnant waters could ever rest on its summit; and yet contrary to the general opinion of the origin of bogs (as being produced from fallen woods and stagnant waters), two-thirds of this hill on the west end are covered with a shallow Red bog from 3 to 6 feet deep, resting on a porous stratum of gravel, whereas the remaining one-third or east end is good arable and tillage ground, although lower than the bog, and consequently receiving more of its surface waters. There is no break whatever in the surface between the bog and land, or any sudden line dividing the one from the other, except the necessary inclosures. In fact, I have every reason to suppose, that in former times, the whole of this hill was covered with a thin stratum of bog, which has been improved from time to time, till now reduced to about two-thirds of its original quantity. The Section, No. 25, describes the fall of this hill of bog.

A. R.
1,246. 3. Irish.

The bogs west of the hills of Cloonelta, Taghnoosk, &c. containing 2,019 acres 2 roods 4 perches, are particularly well circumstanced to favour the objects of drainage in the fullest extent, being divided and intersected by numerous sources of the river Suck, from which the bogs rise on both sides with ample elevation; however, as these streams and ventages are all in a state of nature, there are many impediments which obstruct the free run of the waters. These obstructions must be removed before the minor or surface drains of the bogs are opened; and therefore I have, as a matter of the first consideration, taken the levels of the two principal outlets or sources of the river Suck, and have provided for the removal of all such obstructions, whether arising from the narrow windings of the river, from any natural bar or ford, or from being choaked up by the growth of sedge or weeds that constantly spread themselves in tufts and hillocks on the sluggish streams of this country. Under these circumstances, I beg leave to draw your attention to Section, No. 22.

The line of this section is taken from the surface water of Lough-eluyn along the outlet stream through the bottoms of Kilmorebeg, Cloonsuck, and to the fords at Drumalough and Cloonchamber, being a distance of 2 ½ miles with a fall of 10 feet.

This stream runs in the lowest vale of this part of the country, and is the only stream running from Lough-eluyn, consequently it receives a great influx of water in flood time from the lake, and also from the adjoining bogs, which from its narrow and winding course it is unable to discharge, until the whole vale of meadow and pasture ground in which it rises is completely under water; it is therefore absolutely necessary to provide for the lowering, widening and straightening the course of this great outlet. The first improvement proposed is, to make an entire new cut for the river about 150 perches long, running from A. to B. at the bottoms of Drumalough, and to widen and shorten by similar cuts wherever necessary the whole line of stream to Lough-eluyn; these proposed new cuts are described by a tint of red on the section, and by double red lines on the map. I would also recommend the eel weir at Crelaghan to be removed.

These improvements will at once more than doubly increase the value of the bottoms on each side of the river, and enable the farmers to enter on the reclaimage of the adjoining bogs

Nº 1.
Mr. Longfield's Report on Lough Gara Diſtrict.

bogs which hitherto has been unattempted. The next material line of ventage stream is the other source of the river Suck, commencing at Cloonkan, and running to Calur, Taghnoosk, Cloonfower, Cloonelta, Cloonsuck and Cloonborrive, where it discharges into the stream from Lough-eluyn at the point C, being a distance of above four miles, as described by Section, No. 24.

The whole of this stream is similarly circumstanced with the one from Lough-eluyn, being narrow and winding, and the course almost lost in many places with sedge and scraws; there are also two fords at Taghnoosk and Cloonsuck, which if deepened would greatly facilitate the run of waters at those points; in fact, the whole course of the stream from Cloonkan to Cloonborrive requires the same improvement in deepening and shortening its course, as recommended on the Lough-eluyn stream.

Connected with and discharging into those two main outlets, are several minor streams and proposed ventages, the chief of which are described by the Sections, No. 23, and from 25 to 38 inclusive, which with the system of minor drains and roads marked on the map, is all I conceive necessary to recommend in this division, the proprietors of which are ——— Wills, O. O'Connor, and Arthur French, Esquires.

ESTIMATE of the proposed Works on Second Division.

Nº of Section.	———	Average Sinking	Width at Bottom.	Width at Top.	Rate per Perch.	Amount.		
	Opening and deepening the Stream from LOUGH-ELUYN to CLOONCHAMBER.					£.	s.	d.
22.	To 102 perches of new cut for the stream, commencing at the ford of Clooncbamber, and going up stream through clay and gravel -	5.	10.	15.	16/3.	82	17	6
	To 177 perches of similar new cut, in the bottom of Cloonborrive, in Black bog - -	5.	10.	15.	12/1½.	102	6	1½
	To 28 perches of similar new cuts above ditto, in Black bog - - - - - -	5.	10.	15.	12/1½	16	19	6
	To 134 perches of similar new cuts, between Kilmorebeg and Lough-eluyn - - -	5.	10.	15.	12/1½	81	4	9
	To deepening 71 perches of present stream below the bridge at Cloontarsna, in Black bog -	- -	- -	- -	5/.	17	15	—
	To deepening 60 perches of present stream near Clooncbamber - - - - - -	- -	- -	- -	5/.	15	—	—
23.	To 396 perches of main drain along the west side of Cloonfower, to carry off the present streams from the summit, through bog clay and gravel - - - - - - -	8.	3.	11.	7/3.	143	11	—
24.	To 226 perches of entire new cut for the river, commencing at Cloonborrive, and proceeding to the fort at Cloonelta - - - -	5.	10.	15.	16/3.	183	12	6
	To deepening 165 perches of the river between said ford and the bridge of Cloonelta - -	- -	- -	- -	5/.	41	5	—
	To 992 perches of new cut for the stream from Cloonelta bridge to Cloonkan, through bog, clay and gravel - - - - - - -	5.	10.	15.	16/3.	806	—	—
25.	To 187 perches of main drain, commencing at the little bridge of Cloontarsna, following up stream, and round the east end of Taghnarra -	8.	3.	11.	7/3	67	15	9
	To 126 perches of main drain across the shallow bog of Cloonelta, falling into the main outlet, Nº 24. - - - - - - -	8.	3.	11.	7/3.	45	3	6
26.	To 395 perches of cross drain in the bog of Cloonkan, and continuing round the west side of Taghnarra, where it falls into the main outlet, Nº 24. - - - - - - -	8.	3.	11.	7/3.	143	3	9
27.	To 114 perches of main drain in bog on the north side of Taghnoosk - - - -	9.	3.	12.	11/.	62	14	—
	To 60 perches of main drain, in continuation -	12.	3.	15.	28/.	84	—	—
	To 44 perches of ditto - - - ditto - -	10.	3.	13.	15/7.	34	5	8
	To 196 perches of main drain, in continuation, ending at Cloontarsna - - - -	8.	3.	11.	7/3.	71	1	—

N° 1.
Mr Longfield's Report on Lough Gara District.

Estimate of the proposed Works on Second Division—*continued.*

N° of Section	———	Average Sinking	Width at Bottom	Width at Top.	Rate per Perch	Amount.
27.	To deepening 64 perches of present drain by Cloontarsna to Lough-eluyn - - -	-	- -	- -	2/.	6 8 —
28.	To 360 perches of main drain, from the stream at Cahir through the great cush to Licharbue -	8.	3.	11.	7/3	130 10 —
29.	To 160 perches of similar drain communicating with ditto - - - - - -	8.	3.	11.	7/3	58 — —
30.	To 374 perches of similar drain up the cush in Cloonkan Bog to Derrylaghan - - -	8.	3.	11.	7/3.	135 11 6
31.	To 116 perches of main drain from the bridge of Mountainstown up the present choaked stream and shaking scraw towards Churchborough - - - - - - -	7.	3	10.	5/10.	33 16 8
	To 279 perches of main drain, in continuation -	9.	3.	12.	11/.	153 9 —
	To 80 perches of main drain, in continuation -	8.	3.	11.	7/3.	29 — —
	To 92 perches of main drain across, towards Clooneunra - - - - - - -	9.	3.	12.	11/.	56 — —
	To 60 perches of ditto - - - ditto - -	8.	3.	11.	7/3.	21 15 —
32.	To 320 perches of main drain, commencing at main, N° 31, and continuing through the shallow mountainy bog to the road near Churchborough - - - - - - - -	9.	3.	12.	11/.	176 — —
33.	To 96 perches of main drain, commencing at N° 31, and continuing towards the high bog of Wiltsborough - - - - - -	9.	3.	12.	11/.	52 16 —
	To 224 perches of main drain, in continuation, and ending at the road near Stonepark - -	8.	3.	11.	7/3.	81 4 —
34.	To 127 perches of main drain, along the deep cush and swallow holes on the west side of Clooncunra - - - - - - -	9.	3.	12.	11/.	69 17 —
	To 107 perches of main drain in continuation, and falling into main outlet, N° 22. - -	7.	3.	10.	5/10	30 15 3
35.	To 247 perches of main drain, from the river at Cloonsuck up the great shaking scraw to Cloonkeen - - - - - -	9.	3.	12.	11/.	135 17 —
36.	To 254 perches of main drain across the bog of Cloonkeen and Cloonchamber, to the outlet, N° 22. under Drumalough - - - -	9.	3.	12.	11/.	139 14 —
37.	To 251 perches of opening stream, and making main drain from the limestone quarry, near Mullaghathoo, and continuing same through Cloonchamber bog - - - - -	8.	3.	11.	7/3.	90 19 9
38.	To 194 perches of main drain under the lands of Armcashel, and across to the south end of Cloonchamber - - - - - -	8.	3.	11.	7/3.	70 6 6
	To 142 perches of main drain across bog from Cloonchamber to Cloonkeen - - -	8	3.	11.	7/3	51 9 6
	MINOR DRAINS, &c.					
	To 485 perches of minor drains in Criglaghan and Cloonchamber bog - - - -	6.	3.	9.	4/8.	113 3 4
	To 4,180 perches of minor drains in bogs of Clooncunra and Armcashel - - -	6.	3.	9	4/8.	975 6 8
	To 2,850 perches of minor drains in bogs of Clooncunra and Ballinlough - - -	6.	3.	9.	4/8.	665 — —
	To 770 perches of minor drains in bogs of Cloonborrive and Cloonfower - - -	6.	3.	9.	4/8.	219 13 4
	To 570 perches of minor drains in bogs of Cloonelta and Kilmore - - - -	6.	3.	9.	4/8.	133 — —
	To 900 perches of minor drains in bogs between Tagbnoosk and Cloonfower - - - -	6.	3.	9.	4/8.	210 — —

N° 1
Mr. Longfield's Report on Lough Gara District.

Estimate of the proposed Works on Second Division—*continued.*

N° of Section	——	Average Sinking	Width at Bottom	Width at Top.	Rate per Perch	Amount. £.	s.	d.
38.	To 550 perches of minor drains in bogs between Taghnana, and the Lough - - - - -	6.	3.	9.	4/8.	128	6	8
	To 1,420 perches of minor drains in bogs between Taghnoosk, Calm, Cloonkan and Lake -	6.	3.	9.	4/8.	331	6	8
	To 2,500 perches of minor drains in bogs from Cloonkeen to Tully - - - - -	6.	3.	9.	4/8.	590	6	8
	To surface drainage for 3,857 Irish acres, at the rate of eight perches, or sixteen shillings per acre - - - - - - - -	- -	- -	- -	- -	3,085	12	—
	To 2,200 perches of cross roads, at *6 s. 6 d.* per perch - - - - - - -	- -	- -	- -	- -	715	—	—
						10,688	19	6½
	Contingencies and unforeseen Expenses, 20 per Cent. - - -					2,137	15	11
	Total Expenses on Second Division - - - - - £.					12,826	15	5½

THIRD DIVISION, comprehending the Bogs of Ballindrimly, Cloomee, Cloonfower, Loughglyn, Breanamore, Drummin, &c. &c. containing A.6,725. 3. 34.

A. R.
4,152. 1. Irish

THIS Division of Bogs is bounded on the south by the road from Cloonallis by Cloonfower to Carrowbeatty, being the northern boundary of the Second Division.

In viewing the map of those bogs, you will perceive them intersected by one of the principal sources of the river Suck, running from Cloonsliver and Cloonfinglass mill, by Cloragh and Kilgorrive to the bridge of Cloonad, below which it is joined by the stream from Clooncraff, and running by Cloonree passes through the bridge of Ballindrimly, near Castlerea. This stream, the falls of which are described by Section, N° 41, is the great outlet to the east, receiving the whole of the waters from the east end of Breanamore (being the summit) to Ballindrimly. West of the said summit at Breanamore, the waters are discharged in a quite contrary direction, the chief of which falling into the great cush and sloughs from Breanamore forms a different stream, which eventually passes under the bridge at Annagollagh, and falls into one of the sources of the river Lung at Cloontowart bridge; so that, in fact, the waters which rise and flow from the east end of Breamore, and run in contrary directions for at least 100 miles before they meet, are separated there; again, at the confluence of the Lung and Suck, one portion running by the Lung, and the remainder running by the Suck. You will also find the face of those bogs broken by considerable high fertile islands, and by vales and cushes, which form the natural ventages of them. These vales and cushes of themselves point out the true lines of main drainage, from which (except in a few instances) there is little occasion to deviate. In all those lines, marked by nature, I have laid out my main drains, as described in the Sections from N° 39 to N° 52 inclusive; and as those section lines are taken along the permanent and lasting features of the bogs, I shall, on that account, beg leave to describe the sections I have made of this portion of the District, following them numerically as they are marked on the map.

Section, N° 39, commences at Cloontowart bridge on the river Lung, and following up the stream to Annagollagh bridge (on the road from Loughglyn to Ballyhawnis) forms the chief western ventage to the bogs of Kilruddaun, Cloonmoyle, and Urrisaun, through which the line is continued to the small pipe at the cross roads near Elwoods of Carrowbeahy. The fall between the bottom of Annagollagh bridge, to the bottom of Cloontowart bridge, is only 3 feet 6 inches; but the bottom of the latter bridge (which consists of four arches of large dimensions) may, by being cleared of the accumulated sand and gravel, be lowered 1 foot 6 inches, which will increase the fall to 5 feet.

I am thus particular in describing the capability of fall between those points, in order that the means it affords may be applied to relieve the low grounds, cushes and curraghs, above Annagollagh bridge (which contain above an hundred acres) of the stagnant waters and floods to which they are constantly subject. Proceeding up the section line from Annagollagh bridge, the stream, in its present natural state, finds its way unrestrained through those extensive sloughs, cushes and curraghs, before-mentioned, all of which is a mass of shaking Black bog and stagnant waters the whole way from Annagollagh bridge to

N° 1
Mr. Longfield's
Report on Lough
Gara District.

Carrobeahy, being a distance of a mile and three quarters; part of which, immediately under the hills of Carrobeahy, is above 30 feet, as described by Section 39.

Along this line, which forms the subject of the Section, N° 39, I have laid out some considerable improvements, which I deem of the first importance, in order that it may be made capable of receiving and carrying off the waters of the several main lines with which it is connected. I would therefore propose a new arch, of 10 feet span, at Annagoliagh, the bottom of which will be 5 feet lower than the present arches, and as low as the proposed bottom of Cloonowart bridge when deepened 1 foot 6 inches, so that the stream between the two bridges may be carried along on a dead level.

This five feet additional fall enables me to lay out a complete main drain (instead of the present one made some years back by Mr. French, which is now nearly choaked up) the whole way to Carrobeahy, on an average of 8 feet deep, with 6 feet bottom and 14 feet at top. The advantages to be derived from this line of proposed main drain are exceedingly great. In the first place, it effects the complete drainage of a large portion of deep Black bogs and curraghs, which contain (by burning and making ashes) in themselves, the means of bringing them to a speedy state of cultivation; and, secondly, by lowering this ventage stream it creates a fall, by which the Black bogs of Kilruddaun, Meelick, and Cloonmoyle, may be also sufficiently drained. Indeed, if it were within the compass of reasonable expense, I would advise, at a future day, the re-sinking of this main line to a still greater depth, in order that strong Black bogs through which it runs, might be converted into ashes for the purpose of manuring the Red bogs connected with them. This line of main drain will receive the waters of several ventages on both sides, the most considerable of which are the lines marked 40 and 45, which carry off the waters of the bogs north and west of Breanamore, &c. for a distance of two miles from their confluence with this main outlet.— N° 40, commencing at A. Section, N° 39, takes a direction through an excessive wet cush, between Meelick and Cloonmoyle, which is from 10 to 20 perches wide, and runs for about a mile to Breanamore; it then continues up a lesser vale of cush to the south point of Kilruddaun, and along the verge of Cloonbonny to the road from Loughglyn to Ballinlough; the course of this Section receives the chief of the waters of this division falling westward to the river Lung, and eventually to the Shannon by Lough Garra.—N° 41. This line is a continuation from the summit of N° 40, along a vale of Red bog and stream to Clooneiafel, where it falls into a deep shaking cush from 5 to 6 perches wide, between the bogs of Aughalour and Munneyrung, and continuing along said cush to the junction of the stream from Cloonard bridge, at which point the whole surface forms such an immense quagmire, that the course of the streams are entirely lost.

However, on following down the vale to Cloonree and Cloonaff, the stream increases considerably, although with little fall till it passes the old eel weir at Cloonaff, after which it has a tolerable fall to Ballindrumly bridge, as described in the Section. The old weir at Cloonaff throws back water for a considerable distance on the bottoms of Cloonaff, Cloonree, Cloonard and Anghalone, &c. so much so, that after one night's rain I have seen the flood water thrown back to near Cloonard bridge, being a distance of two miles from the weir; in consequence of which, I propose that this weir be taken down, and that the river may be widened, sunk and shortened in sundry places, as described in the map and section.

Section, N° 42. This line of section is connected with N° 41, inasmuch as the waters it receives are discharged into N° 41, at two different points. First, at the west point of Munneyrung; and, secondly, at the bottoms of Cloonaff, which is its lowest point of ventage. Commencing at this lowest point of ventage, the course of the section and proposed main drain is directed up a low cush to the south verge of the island of Annagh Vicar; it is then continued along a line of subterraneous stream through the bog of Annaghnakillagh, and through the centre of a very deep and wet Red bog between Cloonbilla and Munneyrung, where it falls into the Clooneiafel stream, which communicates with the line of Section, N° 41. The line is then continued up the western Clooneiafel stream to its source, from whence it is then directed through the Red bog to the bridge on the road between Breanamore and Clooneiafel, below which it also communicates with line, N° 40. This last portion, for about 120 perches, falls eventually by the river Lung to Lough Garra, quite in the opposite direction to the rest of the line, which falls to the river Suck by Castlerea. Along this line there are no less than four different falls, quite unconnected with each other; however, they all command a considerable portion of bog surface, and therefore I have given the section as one continued line, with the depth of the proposed drains, marked thereon, all of which, it may be seen, have abundant falls to their nearest local outlet. As an off branch to this line of section, I have introduced Section, N° 43, taken from the point of Annaghmakillagh, across the high Red bog, to the point of Clooncoose, at the lake of Drumalough; and this I have done to shew the sudden rise of the bog on that side of Section, N° 42; and also to shew the prodigious growth of Red sponge bog, which in this case has not only filled up what was the natural valley between the islands of Annaghnakillagh and Clooncoose, but has out-topped those lands by several feet, although possessed of the best fall on every side. This is another proof, that the fibres of bog moss, in any situation, will (if undrained) retain sufficient quantity of water for the growth of its vegetable matter.

Section, N° 44, commences at the bridge of Cloonanaghty, and is directed up the stream to its source near Breanabeg; from which it is continued through the large bog to the summit at

N° 1.
Mr. Longfield's Report on Lough Gara District.

at Drumalough, where it falls into the lake. This line is most advantageously situated for a main drain, having an abundant fall, and receiving the waters of a great extent of very wet bog. On the same section I have shewn the level of the lake at Drumalough, and also the supply stream from said lake to the corn mill at Cuglaghan. This mill stream is the only ventage for the stream of Drumalough, but being almost choaked, it keeps the waters up to an unnecessary height; and therefore, as there is a fall of 13 feet from the lake to the mill-pond, I have proposed to sink the mill race, so as to lower the lake about 5 feet, which may be done without any injury to the mill; although being of exceeding great benefit to the bogs on each side the stream, particularly along the verge of Clooncoose, where the progressive improvements of the tenantry on that land has been stopped by the height of the mill stream and lake.

Section, N° 45, describes the height and depth of a line through the centre of the Red bog of Cloonaghty and Breanamore, which though not more than from 40 to 60 perches wide is yet exceedingly wet, deep and shaking, and falling into a low vale of cush on the west side of Cloonmoyle, through which it runs for above a mile and then falls into Section, N° 39. From the line of drain at the cush of Cloonmoyle, I have laid out a cross line through the deep bog of Urrissann and Derrylaghan, until it falls into a small rivulet called the barony stream, which it follows to the barony bridge near Cahir, and finally discharges into one of the sources of the river Suck at Taghnoosk, having a most ample fall, as appears by Section, N° 40. In this part of the bogs, I have laid out another line of drainage, nearly parallel to N° 45, and approaching it at one point as near as 40 perches; but being divided from it by a ridge of high bog, the drainage of the one line has no more influence on that of the other, than if they were 40 miles, instead of so many perches distant from each other. By this line of main drain, which is described by Section, N° 47, it is proposed, to completely open the course of the barony stream to its source, and to the summit of the bog near Cloonfower, from which point it falls in an opposite direction to the stream on the west of Cloonfower, and thereby into the river Suck.

Section, N° 48, is taken along the bog road from Cloonbonny to Lough Glynn, and also along the road towards Ballyhawnis to the outlet stream running by Kilteboe and Dring to the river Lung. This section also shews the level of said road to the pipe near Kilruddaun, and down the stream to the river Lung.

In describing the objects which the section of this line is intended to represent, it is necessary for me to observe, that at the point of Cloonbonny where it commences, there are some strong springs, that make their way along the road to the sunk bridge near Loughglynn, and from thence through the tower plots where they accumulate and form a small stream running towards the limestone lands of Aughalour, where it sinks into a swallow hole in a limestone quarry, which is the only ventage for the waters of the adjoining bogs, and from the village of Lough Glynn.

The aperture of this swallow-hole being very small, great caution must be observed in making drains, whose waters will discharge themselves that way, in order to prevent the bog stuff from choaking it up altogether; and for this purpose, I conceive it advisable to lessen the quantity of water running that way as much as possible, and therefore I have proposed a road drain from Cloonbonny, calculated to carry the waters from the sunk bridge and from Lough Glynn round by Mr. Thomas's gate along the road to the bridge at Cloonbonny, where it falls into an outlet stream to the river Lung. The remainder of the section describes the proposed deepening of the road drain from Cloonbonny to the pipe at Kilruddaun, and also the improvement of the stream which rises from the springs at Cloonbonny, and falls into the gully hole at Aughalour.

N° 50, is a section of the barony stream between Cloonree and Cloonana, shewing the proposed sinkings along that line to the bridge near the cross roads at Woods's, in order to carry off the waters from the bogs of Moor and Ballindrimly.

N° 51, is a line of section of proposed drain from Ballyglass across the bog to Aughalour, and to the outlet stream from Clooncrafel, done with a view of turning the waters of Ballyglass and Cloonrad bogs, so as to prevent the constant floods in the Turlogh of Aughalour.

N° 52, is a section of a main drain from the river north of Cloonad, through the Red bog to the road at Ballyglass.

I have taken numerous other levels, in this portion of the district, which although necessary for me to be acquainted with, are not of that importance as to require sections of them.

However, for the sake of reference, and to convey as much information as possible to the public concerning the levels of the country, I have marked on the large map the height of the several points above Lough Garra, which I found necessary to ascertain whether done with a view to prove the work, or for the purposes of actual drainage.

Manuring Gravels and Limestone.

ON this important subject, it is a pleasing circumstance to remark that there is scarcely any part of the lands adjoining or in the interior of the bogs, that does not afford manuring gravel except the lands of Breanamore, where I understand little is to be expected for the reclaiming of the surrounding bogs.

N° 1.
Mr. Longfield's Report on Lough Gara District.

Anghalour is however very favourably situated to diffuse the benefits of its fine and inexhaustible limestone quarries; I would, therefore, recommend narrow roads to be laid out in all the favourable directions as described in the map.

In the high hills of Kilruddaun and Ballyglass, there is excellent gravel, and loose limestones. Here I would also recommend the adoption of the proposed roads, communicating with the west end of Breanamore, Cloonaghty and Cloonfower, &c. &c. &c. all which I have provided for in the following Estimate.

ESTIMATE of the proposed Works on Third Division.

N° of Section	——	Average Sinking	Width at Bottom	Width at Top	Rate per Perch	Amount.
						£. s. d
39.	To 70 perches of deepening and widening the stream from Annagollagh bridge to Cloontowart bridge, average 17 cubic yards to the running perch, at 4*d.* per yard - - -	3.	6.	9.	5/8.	19 16 8
	To building a new arch at Annagollagh bridge, 5 feet lower than the present, and 10 feet span - - - - - - - -	- -	- -	- -	- -	50 — —
	To 169 perches of deepening and widening present stream from Annagollagh bridge to the small lough at Drummin, average 25 cubic yards to the perch, at 4*d.* per yard - -	4.	6.	10.	8/4.	70 8 4
	To 280 perches of deepening and widening said present stream above the lough to Carrobeahy, along the whole line of which it is nearly choaked up - - - - - - -	8.	3.	11.	7/3.	101 10 —
	To opening 112 perches of old drain under the hills of Carrobeahy, to the small pipe near Elwood's - - - - - - - -	6.	3.	9.	4/8.	26 2 8
40.	To 230 perches of main drain in wet cush, between Meelick and Cloonmoyle - -	8.	3.	11.	7/3.	83 7 6
	To 204 perches of main drain, in continuation to Kilruddaun - - - - - -	6.	3.	9.	4/8.	47 12 —
	To 130 perches of main drain, in continuation to the end of new drain, west of Cloonbonny -	8	3.	11.	7/3.	47 2 6
41.	To 133 perches of main drain in Clooncrafel bog, and falling into great cush - - -	9.	3.	12.	11/.	73 3 —
	To 306 perches of main drain in the shaking scraw and cush, ending opposite the long wall at Anghalour - - - - - -	8.	3.	11.	7/3.	110 18 6
	To 118 perches of main drain in shaking scraw, to the junction of the stream from Cloonarra bridge - - - - - - - -	8.	3.	11.	7/3.	42 15 6
	To 510 perches of sinking present stream from Annaghvicar to Ballindrimly, below the old well, making the bottom 6 feet wide, where it joins the Cloonarra stream, and increasing it to 12 feet at Ballindrimly; average excavation 49 cubic yards to the perch, at 4*d.* per yard -	3.	9.	12.	16/4.	414 7 6
42.	To 330 perches of main drain from the river at Cloonaff along the cush and subterraneous stream to the point C. near Annaghnakillagh	8.	3.	11.	7/3.	119 12 6
	To 136 perches of main drain, in continuation to the outlet at B. - - - - -	10.	3.	13.	15/7.	105 19 4
	To 318 perches of main drain, in continuation to the road between Cloonbonny and Breanamore - - - - - - - . -	8.	3	11.	7/3.	115 5 6
43.	To 20 perches of main drain from the point C. to Annaghnakillagh - - - - -	8.	3	11.	7/3	7 5 —
	To 97 perches of main drain across the bog to the lake at Drumalough - - - -	10.	3.	13.	15/7.	75 11 7
44	To 250 perches of new cut for mill race, from the lake at Drumalough to the bridge at Creglaghan - - - - - - -	8	3.	11.	7/3.	90 13 6

N° 1.
Mr. Longfield's Report on Lough Gara District.

Estimate of the proposed Works on Third Division—*continued*

N° of Section	—	Average Sinking	Width at Bottom	Width at Top	Rate per Perch	Amount.		
						£	s.	d.
44.	To 356 perches of main drain from Drumalough, through the Red bog of Breanabeg and Cloonfower, to the bridge at Cloonaghty - -	9.	3.	12.	11/.	195	16	—
45.	To 160 perches of main drain, commencing at the road between Cloonaraghty and Breanamore, and proceeding towards Cloonmoyle -	9.	3.	12.	11/	88	—	—
	To 40 perches of minor drain in continuation -	12.	3.	15.	18/.	36	—	—
	To 415 perches of main drain in continuation, ending at the main line, N° 39, to which it discharges - - - - - - - -	9.	3.	12.	11/	228	5	—
46.	To 150 perches of main drain from Cloonmoyle, across the bog to the barony bridge, near Elwood's - - - - - - - -	8.	3.	11	7/3	54	7	6
47.	To 280 perches of main drain from the main drain, N° 46, through the bog of Cloonfower and Cloonmoyle - - - - - - -	10.	3.	13.	15/7	218	3	4
	To 58 perches of main drain in continuation, to the stream running under the broken bridge of Cloonfower - - - - - - -	8.	3.	11.	7/3.	21	—	6
48.	To 149 perches of deepening the northern road drain, from Cloonbonny to the village of Loughglyn, in order to turn the water from the sunk bridge; average 5 feet additional sinking - - - - - - - -	- -	- -	- -	5/.	37	5	—
	To 118 perches of deepening the northern road drain, in continuation round the road by Kilteboe - - - - - - - -	- -	- -	- -	5/	29	10	—
	To 40 perches of d° - d° - in continuation	- -	- -	- -	2/.	4	—	—
	To 54 perches of opening road drain, from the bridge at Cloonbonny towards Ballyhawnis -	- -	- -	- -	3/.	8	2	—
	To 70 perches of d° - d° - d° - -	- -	- -	- -	2/.	7	—	—
	To 215 perches of sinking and widening present stream, from the pipe at Kilruddaun to the river Lung - - - - - - -	- -	- -	- -	3/.	32	5	—
49.	To 107 perches of main drain through the great slough at Aughalour - - - - - -	6.	3.	9.	4/8.	24	19	4
	To 148 perches of main drain, in continuation up a line of subterraneous streams - -	9.	3.	12.	11/.	81	8	—
50.	To 472 perches of opening the whole course of the stream from the Bridge, near Woods's of Cloonarra, to the main stream near Cloonree -	7.	3.	10.	5/10	137	13	4
51.	To 96 perches of main drain along the bog road to Aughalour - - - - - - -	9.	3.	12.	11/.	52	16	—
	To 114 perches of main drain, from the Lough Glyn road to the new road at Ballyglass -	7.	3.	10.	5/10	32	6	—
52.	To 284 perches of main drain through the bogs of Cloonad and Ballyglass - - - -	9.	3.	12.	11/.	156	4	—
	MINOR DRAINS, &c.							
	To making 2,200 perches of minor drains in the bogs of Ballindrimly, Cloonarra, and Cloonard	6.	3.	9.	4/8.	513	6	8
	To 6,600 perches of minor drains in the bogs of Cloonfower, Drimalough, and Cloonallis -	6.	3.	9.	4/8.	1,540	—	—
	To 2,370 perches of minor drains in the bogs of Lough Glyn, Keltiboe, Cloonmullen and Cloontowart - - - - - - - -	6.	3.	9.	4/8.	553	—	—
	To 5,580 perches of minor drains in the bogs from Cloonbonny to Cahir - - - - -	6.	3.	9.	4/8.	1,302	—	—
	To 2,900 perches of minor drains in the bugs of Kilgorrive and Cloonsheven, west of the road from Castlerea to Frenchpark - - -	6.	3	9.	4/8.	676	13	4

Estimate of the proposed Works on Third Division—*continued.*

Nº of Section.	——	Average sinking	Width at Bottom.	Width at Top.	Rate per Perch	Amount.
						£. s. d.
52.	To surface drainage for 4,152 Irish acres, at the rate of eight perches or sixteen shillings per acre - - - - - - - -	- -	- -	- -	- -	3,321 12 —
	To 2,500 perches of proposed roads in said Division, at 6/6 per perch - - - -	- -	- -	- -	- -	812 10 —
					£.	11,765 13 7
	Contingencies and unforeseen Expenses, 20 per cent. - - -					2,353 2 8½
	Total Expenses in Third Division - - - - - -				£	14,118 16 3½

FOURTH DIVISION, comprehending the Bogs of Aughadresdan, Aughalusta, Roosky, Aughahurrin, Crenane, Drumalisson, Ballaghadereen, &c. &c. containing A. 3,406. 2. 2.

Irish:
2,103 acres.

THIS Division of Bogs is situated between Lough Glyn and Ballaghadereen, lying chiefly on the east side of the present road, and on each side of the new road between said towns. They are subdivided by several streams falling into the river Lung, and also by the course of that river between Crenane bridge and Lung bridge, where the river being dead and deep is in most places navigable for boats of 10 or 15 tons burden.

To these streams, and to the river Lung, the bogs of this Division have most ample falls, even where they almost immediately join them; and in general the interior of the bogs rise from 20 to 50 feet above their local outlets; however, the streams themselves run in general very sluggish, and are for the most part entirely choaked up by an accumulation of every sort of impediment to the run of the waters, particularly the growth of sedge and scraws, which in many places nearly spread themselves across the streams. In such cases it is absolutely necessary to open, by new cuts, the course of those streams; not merely for the speedy discharge of the waters, but for the drainage of the Black bogs in which they usually run, and which being drained will supply manuring ashes for the Red bogs adjoining.

In the Section, Nº 53, you will find described the fall of one of those principal streams, commencing at the bridge of Aughacurrin, and falling down to Roosky, and to the Lung at Aughalusta, with a fall of 12 feet 6 inches in a distance of near two miles, one half of which is through deep Black bog, and for the most part of the way it is quite choaked up.

This line being the principal vent for the streams of Moyne, Cartoon, &c. should be opened with at least 6 feet bottom, and sinking according to the proposed line on the Section; the first good effects of which will be the complete drainage of 57 Irish acres of the grazing Black bogs of Aughacurrin, besides the bottom grounds of Cartoon, Roosky and Aughalusta.

Section, Nº 54, is taken along the stream under the north side of Feagh, from its confluence with the river Lung to the bridge near Mr. Dillon's, of Aughadresdan, from which point it is continued along the verge of the Bog of Aughaderry, to the Frenchpark road, and along said road to the bridge at Moyne.

From the river Gaira, along the bottoms at Feagh, this stream is entirely choaked up, and would require to be cut entirely new the whole way to near its junction with the Tail Race from the mill at Feagh, but on account of the small fall to the river, its depth ought not to exceed an average of 5 or 6 feet; however, as sufficient breadth should be given to pass off the waters, I would recommend the new cut to be 6 feet wide at bottom, with the usual slope in the sides of 6 inches to a foot.

From the tail-race of Feagh mill, to the pipe at Aughaderry, the line of Section is taken along the present drain between bog and land, which should be sunk the whole way at an average of seven feet, and continuing same along the Frenchpark road to the broken bridge.

Nº 55 is a Section of another outlet stream along the west side of Aughacurrin, and also striking across the Red bog to the Frenchpark road. This stream, which is comprised of the waters of the bogs of Aughacurrin and Moyne, is similarly circumstanced as the Feagh stream, and will require the same system of improvement, as far as the point of Aughadresdan, where it expands considerably, and forms a deep hole of eight or ten perches diameter. From this hole the stream at once increases to considerable magnitude, owing (as it is supposed) to the rising of waters from subterraneous passages that got vent at that point,

Nº 1.
Mr. Longfeld's Report on Lough Gara District.

point, and which in all probability are the waters which are swallowed by the gully holes in the bogs of Grallagh, &c. many of which are 100 feet above this discharging point, and not more than a mile and a half distant. From the hole before mentioned the stream forms a most excellent outlet along the west side of Roosky to the river Lung at Crenane.

Nº 56 is a Section of a central line of main drain from outlet 55 to the Frenchpark road.

Nº 57 is a section of a main drain commencing at the county bounds at Roosky, and striking across the road between Crenane and Feagh, following the east side of said road to Aughadresdan, and falls into the line of outlet, Nº 54, at B. This line will cut off the great springs of Aughadresdan, which flow into the Red bog between that land and the Feagh stream.

Nº 58 is a Section of a proposed main drain to turn the waters from the bridge of Aughalusta into the main outlet, Nº 53, so as to prevent them running their present course and falling into swallow holes, which in the event of general drainage may become insufficient to carry off the waters.

Nºs 59 and 60 are Sections of two lines of main drain in the bogs of Aughalusta and Cartoon, along the last of which I propose a line of bog road for the conveyance of gravel into the interior.

Section 61 is taken from the river Lung, along the east verge of Lung bog, to the new road near Ballaghadereen, and is an excellent line to draw off the waters from the cut bogs and bottoms near that town.

Nº 62 represents the fall of the new road from Ballaghadereen to the river Lung, on each side of which I propose a good minor drain, which should be five perches from the centre of said road.

Nº 63 and 64 are Sections of two outlet streams in the bogs of Drumalissin, which require to be effectually opened in the same way as recommended for lines 53 and 54.

In the whole extent of this Division, comprising various denominations of bogs, it happens that there is no part which is not either bounded or connected with the river Lung, or the outlet streams before enumerated, and therefore the adoption of any other main taps being unnecessary, I have only to recommend the further system of minor drains, marked on the large map, which, combined with the surface drains, I trust will be sufficient to reduce the whole to consolidation.

In point of manures this Division is also well circumstanced, there being abundance of limestone and manuring gravel in all the intervening lands of Aughadresdan, Aughacurrin, Roosky, Aughalusta, &c. &c. which can be had within 80 perches of almost any part of the interior.

In a part of these bogs, and on the road side from Lough Glyn to Crenane bridge, there may be seen a very curious example of the effects of natural irrigation on Red bog. This irrigation is occasioned by the springs from the north end of Aughadresdan, which forms a small deep lough on the road side at the point C. that commands the whole fall of that part of the bog for about 100 perches to the river Lung, and through which the overflowings of the lake constantly make their way to the said river; creating in their progress over the Red bog (which is from 20 to 30 feet deep) a natural stripe of fine vegetable pasture, which is generally the greenest spot in the country, and eagerly sought after by the cattle in summer time; so much so, that I have seen heifers in imminent danger of being bogged at every step they made through this soft pasture.

On the completion of the bog drainage, and the subsequent improvements, this head of spring water may be used with considerable advantage on all that part of the bog below its level.

This Division of Bogs are partly in the county of Mayo, and partly in the county of Roscommon, and are the property of Lord Dillon, and Arthur French, Esquire.

ESTIMATE of the proposed Works on Fourth Division.

Nº of Section	—	Average Sinking	Width at Bottom	Width at Top	Rate per Perch	Amount £. s. d.
53.	To making 170 perches of entire new cut for the choaked stream in the bottom of Aughalusta - - - - - - -	6.	3.	9.	4/8.	39 13 4
	To making 160 perches of entire new cut for the choaked stream in the bottoms of Aughalusta - - - - - - -	7.	3.	10.	5/10.	45 6 8
	To making 110 perches of entire new cut along the county bounds - - - - -	8.	3.	11.	7/3.	39 17 6

N° 1.
Mr. Longfield's Report on Lough Gara District.

Estimate of the proposed Works on Fourth Division—*continued.*

N° of Section	———	Average Sinking.	Width at Bottom	Width at Top.	Rate per Perch	£.	s.	d.
53.	To making 64 perches of entire new cut along the county bounds, to the point A. - -	7.	3	10.	5/10	18	2	8
54.	To making 296 perches of entire new cut for the stream at the bottoms of Leagh - -	6.	3	9.	4/8.	69	1	4
	To 138 perches of land drain round the verge of Aughaderry to the Frenchpark road - -	7.	3.	10.	5/10	40	5	—
	To 120 perches of sinking present road drain -	- -	- -	- -	2/.	12	—	—
	To building a new pipe, 3 feet lower than the present one at Aughaderry - - - -	- -	- -	- -	- -	5	—	—
55.	To widening and deepening 197 perches of present stream along the west side of Aughacurrin, which is choaked up in many places -	6.	3.	9.	4/8	45	19	4
	To 182 perches of new cut from said stream to the broken bridge on the road to Moyne -	8.	3.	11.	7/3.	65	19	6
56.	To 28 perches of centre main drain intended to run from outlet N° 55, through the bog of Aughadresdan and Aughacurrin - - -	6.	3.	9.	4/8.	6	10	8
	To 297 perches of centre main drain in continuation, and ending at the Frenchpark road -	8	3.	11.	7/3.	107	13	3
57.	To 33 perches of main drain commencing at the Roosky stream, and proceeding towards the road near Clenane - - - - - -	6.	3.	9.	4/8.	7	14	—
	To 72 perches of main drain in continuation, to the road - - - - - - - -	9.	3.	12.	11/.	39	12	—
	To 53 perches of main drain parallel to the road, and ending at the pipe of - -	7.	3.	10.	5/10	15	9	2
	To building a new pipe four feet lower than the present old one - - - - - -	- -	- -	- -	- -	5	—	—
	To 186 perches of main drain, parallel to, and on the west side of the road to Aughadresdan	8.	3.	11.	7/3.	67	8	6
	To 120 perches of land drain on the east side of Aughadresdan - - - - - - -	6.	3.	9.	4/8.	28	—	—
58.	To 70 perches of new cut for the Aughadresdan stream, in clay and gravel - - - - -	7.	3.	10.	5/10.	19	6	8
	To 30 perches of new cut in continuation, in bog - - - - - - - - -	10.	3.	13.	15/7.	23	7	6
	To 40 perches of new cut in continuation, in bog - - - - - - - - -	8.	3.	11.	7/3.	14	10	—
59.	To making 146 perches of main drain in the bog of Aughalosty, commencing at the southern stream near the new road, and proceeding through the Red bog - - - - -	8.	3.	11.	7/3.	52	18	6
	To 56 perches of main drain in continuation, to the large swallow hole near the new road -	7.	3.	10.	5/10	16	6	8
60.	To making 152 perches of central main drain in said bog of Aughalosty from the river near Cartoon, and proceeding towards the river Lung - - - - - - -	10.	3.	13.	15/7.	118	8	8
	To 23 perches of main drain in continuation -	9.	3.	12.	11/.	12	13	—
	To 140 perches of main drain ending at the river Lung - - - - - - -	8.	3.	11.	7/3.	50	15	—
61.	To making 80 perches of main catch-water drain round the east verge of Lung bog, and under the lands of Lung - - - - -	7.	3.	10.	5/10	23	16	8
	To 40 perches of main catchwater drain, in continuation - - - - - - -	8.	3.	11.	7/3.	14	10	—
	To 80 perches of main catchwater drain, in continuation - - - - - - -	10.	3.	13.	15/7.	62	6	8
	To 61 perches of main catchwater drain, in continuation, ending at new road - - -	8.	3.	11.	7/3.	22	2	3

N° 1.
Mr. Longfield's Report on Lough Gara District

Estimate of the proposed Works on Fourth Division—*continued.*

N° of Section.	—	Average Sinking	Width at Bottom	Width at Top.	Rate per Perch	Amount
						£. s. d
62.	To making 80 perches of main drain parallel to the new road, between the river Lung and Ballaghadereen - - - - - -	6.	3.	9.	4/8.	18 13 4
	To 120 perches of main drain in continuation -	8.	3.	11.	7/3	43 10 —
63.	To making 140 perches of new cut, to straighten and deepen the streams from Castlemore, falling into the river Lung - - - -	4	6.	10.	8/4.	58 6 8
	To 80 perches of ditto - in continuation - -	6.	6.	12.	14/	56 — —
	To 160 perches of main drain in continuation, round the verge of Drumalisson and across the bog to the river Lung, at Cloonyvallane -	8.	3.	11	7/3	58 — —
64	To 200 perches of sinking and widening the stream between the bogs of Drumalisson and Cienane - - - - - - -	- -	- -	- -	5/.	50 — —
	MINOR DRAINS, &c.					
	To 2,000 perches of minor drains in bogs north of the river Lung, and east and west of the new road to Ballaghadereen - - -	6.	3.	9.	4/8.	466 13 4
	To 3,180 perches of minor drains in the bogs round Aghalusta - - - - -	6.	3.	9.	4/8.	742 — —
	To 3,600 perches of minor drains in the bogs of Aghadresdan and Aughacurrin - - -	6.	3.	9.	4/8.	840 — —
	To surface drainage for 2,103 acres at eight perches or sixteen shillings per acre - -	- -	- -	- -	- -	1,682 8 —
	To making 250 perches of new road through the bog of Aughalusta, gravel 12 feet wide, at 6*s.* 6*d.* per perch - - - -	- -	- -	- -	- -	81 5 —
					£.	5,186 10 10
	Contingencies and unforeseen Expenses, 20 per Cent. - -				-	1,037 6 2
	Total Expenses in Fourth Division - - - - -				£.	6,223 17 —

FIFTH DIVISION, comprehending the Bogs of Grallagh, Lissdrumneal, Carraghgorrive, Lissacurra, Cloonfad, &c. &c.

THESE Bogs are situated north of the road from Loughglynn to Frenchpark, immediately under the hill of Farrymount, which is the highest point in the county of Roscommon.

Irish; 1,600 acres.

The nature of this tract of bogs, amounting to 2,591 acres 2 roods 38 perches, is exceedingly various, being composed of deep, shallow, shaking, firm, high, low, Black and Red bog, all on a variety of levels, and chiefly resting on a porous stratum, interspersed with numerous swallow holes, the visible depths of which are from 10 to 40 feet below the surrounding surface, and are a proportionate diameter across the top, of from 20 to 100 feet, having the appearance of great gravel pits; many of these swallow holes afford excellent shelter for the mountainy cattle, being lined with different wild shrubs from top to bottom, and in which are discoverable some of the finest large limestones and manuring gravel. The whole face of the bog between Boghill and Curragorrive, being above a mile across, is entirely covered with these holes, and is a good firm bog, with many pasturable spots, where gravel may be had on the surface, particularly round the verges of the gully or swallow holes. I have taken two lines of level, through these bogs, as described by Sections, N^os 65 and 66.

The first of these lines commences at the bridge of Mullin (which is the principal outlet) and continues up the stream to the bridge, on the head between Cloonfad and Grallagh; from this point the line of section is taken through the great mountain bog to Lissergoole, terminating in a large swallow hole at that land. This line ascertains the fall of the Mullin stream for near a mile, in which considerable improvement may be made to Cloonfad, and also a good line of main drain may be opened to the Grallagh road; but in the high mountain bog and swallow holes, extending above a mile, it is impossible to adopt any

N° 1.
Mr. Longfield's Report on Lough Gara District.

systematic lines of drainage, the swallow holes being so numerous, and acting of themselves as the best possible taps, which from time immemorial have continued to carry off all the internal waters of the shallow bogs whose declination tend that way. The second of these lines (as described by N° 66.) commences about the centre of the last mentioned line at the point A. and runs through the highest level of the bogs of Boghill and Lissdrumneal, terminating at the small Turlough of Cartoon at B. This line runs through the highest and deepest part of the bogs, being under Lissdrumneal 23 feet deep, and 217 feet above surface water of Lough Gara, as appears by branch Section attached to this line of Section, N° 66. Of actual deep shaking quagmire, there is not above one-eighth part of the whole 1,600 acres, the remainder being of a shallow mountainy description interspersed with numerous gully holes as before mentioned.

From the variety of the surface and nature of these bogs, it is impossible to lay out a general system of drainage, upon which an estimate might be formed of the probable expense, without spending an unwarrantable space of time in actually laying out, and lock-spitting every line of minor and surface drain, in doing which advantage should be taken of the gully holes as discharging points; indeed, main or minor drains in such situations are unnecessary, as the waters are arrested in their progress at every 30 or 40 perches by this description of natural ventage.

Under these considerations, I am induced to estimate seven-eighths of these bogs by the acre, for surface drains only, to which I shall add some few lines of minor drains in the deep parts, which with some improvements of the general line of ventage between Cloonfad and the bridge of Mullen, is all that I find occasion to recommend to effect the drainage of this division.

It will, however, be necessary to open the interior of the bogs by three lines of roads, which I have marked on the map; two of which are proposed to run through the great bog between Grallagh and Lissergoole at about 80 perches asunder, and the other is proposed to run along the north verge of Cloonfad to Mullen.

These lines will open the whole of the interior of the bogs from Cartoon to Mullen, a distance of above three Irish miles, which from their elevated situation (being through the highest bogs in the district) cannot have the advantage of water communication.

Along the whole periphery of these bogs, much actual improvement has taken place; at Moyne, the chief part of a small farm has been inclosed from the shallow bog on both sides, and along the verges of Lissergoole, Carragorrive, Cluggernagh and Grallagh, the tenants have inclosed and improved parks of from one to three acres each, on which many cottagers have fixed their residence, although held in many cases on a precarious tenure from an under-tenant.

On the whole, I can with great confidence assert, that the improvement of a quantity of these bogs, amounting to near seven-eighths of the entire, would eventually follow the drainage and subdividing of them into proper divisions, provided that suitable encouragement, by leases for long terms, were held out to persons embarking in the speculation.

The proprietors of this division are Lord Dillon and Arthur French, Esquire.

ESTIMATE of the proposed Works on Fifth Division.

N° of Section	——	Average Sinking	Width at Bottom.	Width at Top.	Rate per Perch.	Amount.		
						£.	s.	d.
65.	To deepening and widening 87 perches of present stream between the bridge of Mullen and the new road	- -	- -	- -	3/.	13	1	—
	To deepening and widening 56 perches of present stream above the said new road	- -	- -	- -	5/.	14	—	—
	To opening 46 perches of present stream, from Grallagh to Cloonfad	- -	- -	- -	5/.	11	10	—
	To opening 267 perches of present stream along the south side of Cloonfad to the road (in bog, clay and gravel)	7.	3.	10.	5/10.	92	6	6
	To making 156 perches of main drain in continuation under the high bog of Lissdrumneal to the swallow holes	7.	3.	10.	5/10.	45	10	—
	To making 140 perches of main drain through the wet bog of Lissergoole	8.	3.	11.	7/3.	50	15	—
66.	To making 30 perches of main drain in the deep bog of Boghill and Lissdrumneal	8.	3.	11.	7/3.	10	17	6
	To making 120 perches of main drain in continuation	10.	3.	13.	15/7.	93	10	—
	To making 55 perches of main drain in continuation	6.	3.	9.	4/8.	12	16	8

N° 1.
Mr. Longfield's Report on Lough Gara District.

Estimate of the proposed Works on Fifth Division—*continued.*

N° of Section	—	Average Sinking	Width at Bottom	Width at Top.	Rate per Perch	Amount. £.	s.	d.
66.	To making 50 perches of main drain in the branch line, towards Fairymount - - -	10.	3.	13.	15/7.	38	19	2
	To making 68 perches of main drain in the branch line, ending under Fairymount - -	8.	3.	11.	7/3.	24	12	—
	MINOR DRAINS, &c.							
	To making 860 perches of minor drains in the deep bogs between Cloonfad and Lissdrumneal	6.	3.	9.	4/8.	200	13	4
	To making 300 perches of minor drains in the deep bog of Lissergoole - - - -	6.	3.	9.	4/8.	70	—	—
	To surface drainage for 1,600 acres, perches, at sixteen shillings per acre - - -	- -	- -	- -	- -	1,280	—	—
	To making 308 perches of new road in the high bog of Boghill Gravel, 12 feet wide, at 6*s.* 6*d* per perch - - - - - - -	- -	- -	- -	- -	100	2	—
	To making 439 perches of new road in the lower bog near Cloonfad - - - - -	- -	- -	- -	- -	142	13	6
	To making 460 perches of new road in the north verge of Cloonfad, and across to Mullen	- -	- -	- -	- -	149	10	—
					£.	2,350	16	8
	Contingencies and unforeseen Expenses, 20 per cent. - - -					470	3	4
	Total Expenses in Fifth Division - - - - - -				£.	2,821	—	—

SIXTH DIVISION, comprehending the great bogs lying between Frenchpark and Castlerea, and also the low deep bogs of Ballyglass, &c. &c. the whole containing A. 6,924. 3. 6.

Irish.
4,275 acres.

THIS division is chiefly composed of one great mass of very high Red bog, stretching from the lands of Moor near Castlerea to Cloonshanville near Frenchpark, a distance of above four Irish miles, and varying from one to two miles in breadth, with a very undulating surface, from which there is no great leading outlet. However, there are several streams issuing from this extensive tract, particularly on the west side, part of which make their way by Cloonshanville to Lough Garra, and the remainder discharges into the sources of the river Suck near Castlerea.

To these streams, as well as those falling on the east side by Knockroe, Tully and Bracklin, the whole of the waters of this great bog make their way with various falls; to give some idea of which, as well as to shew the undulations of the under-strata, I have made Section, N° 67, of a promiscuous line, nearly central from one end to the other, as noticed in page 3, and along which I have laid out a proposed road, with off-branches for the conveyance of lime and limestone gravels to the interior and to the east side of the bog, where for a distance of near four miles by the verge of Knockroe, Tully, Bracklin, &c. &c. little else is to be had but mountain granite, slate stone, and poor sandy gravel. However, the lands of Cloonshanville on the north, with Mullin, Leitrim, Cloonfinlass and Cloonarra on the west, all contain an abundant supply of limestone and gravel, particularly Cloonshanville, where the central line of road is intended to commence.

On each side of this road, as well as the off-branches, I propose a parallel minor drain at a distance of five perches from the centre of the roads; so that the space between the two drains will be 10 perches with the road in the middle, and this system is acted upon in all similar cases.

On viewing the Section, N° 67, which, as before stated, was taken promiscuously through the centre, it will be found to rise to the height of 191 feet above the surface water in Lough Garra, and 169 feet above Cloonshanville bridge, which is its principal local discharging point. It will also be found, that although the bog does not fall regularly from the centre to its extreme ventages of Cloonshanville or Cloonarra, yet the Section line crosses at and near the summit of no less than seven intermediate outlets, composed of gullys, deep valleys and streams, running to the east and west sides of the bog, and which are described in Sections, N^os 68, 69, 71, 73, 74, 75 and 76.

To Section, N° 68, I shall beg leave to draw your particular attention, it being a complete cross section of the great bog from Cloonfinlass to Tully, for a distance of about two miles, and also, because it shews the difference of level between that bog and the low deep bog of Ballyglass; by this it appears, that the summit of the section line in the one is 85 feet 4 inches above the summit of the section line of the other, although only separated by the lands of Tully; but in many cases the difference far exceeds 100 feet, there being other parts of the great bog much higher than the section line. It also appears by this section, that the depth of the low bog is considerably greater than the high one, being in many places 35 feet.

The remainder of the sections appertaining to this bog, shew the immense falls that in short distandes may be obtained in almost every part of this extensive tract, which in point of actual drainage cannot be better circumstanced; however, there are disadvantages of situation, that must prevent the rapid subsequent improvement of it, and which cannot in my opinion be remedied, except by the means of numerous cross roads connected with the great main line from Cloonshanville to Castlerea. These disadvantages (which chiefly arise from so great an extent being unbroken by any intervening fertile lands) I have before mentioned in my general observations, page 29.

In addition to the improvement of the natural outlets before mentioned, I have laid out on the large map my proposed system of minor drains, cutting up the bog in patches, containing on an average about 10 Irish acres, the waters from which, must eventually make their way to one or other of those outlets; for such is the general undulating shape of this great bog, that there is scarcely any part, where a considerable body of water could maintain its situation, if intersected by minor or surface drains.

In the low wet Red bog of Ballyglass, I have laid out a deep centre main drain, which is described in part of Section, N° 68, with the addition of a catchwater drain under the lands of Tully and Bracklin, which contain some very strong springs that command nearly the whole of its surface, and which has reduced the greatest part of the bog to a mere shaking quagmire.

I must here beg leave to mention a strong instance of land springs rendering ineffectual any interior drainage which they command, and from which they have not been cut off by a suitable catchwater drain.

The case I allude to in this bog, is that of the drains made by Farrell, the proprietor of Ballyglass. In commencing this work, Mr. Farrell run two boundary drains of 6 feet wide and 5 feet deep from the land to the interior of the bog for about 100 perches long, and also a terminating boundary drain of 127 perches long, inclosing (as he conceived) his portion of the bog, forming nearly a square of about 70 Irish acres, one-fifth of which was cut away for turf, leaving about 56 acres of high Red bog This piece he also subdivided by three similar drains at about 30 perches asunder, which with the boundary drains, divided the whole into four parts of about 14 acres each. These drains were all made some few years ago, and having ample falls, the operation of them might be expected by this time to have reduced the inclosed bog to something like a state of firmness, but the fact is quite the contrary; for such is the constant supply from the springs of Tully, and from the under-stratum of the bog, that it was with difficulty I could walk (in the middle of summer) along the verge of those drains, although I took advantage of treading on the stuff which was thrown up from their bottoms. The only visible effect, which I perceived they produced, was that of stopping the progress of the internal waters of the bog, and forming in the centre main drains a constant stream of pure spring water, in a situation where there never was a stream before; thus far, this drain answers to receive the waters passing through the interior to its verge, but it has not the least tendency to prevent the flow of springs from the high lands of Tully, or from the bottom of the bog.

To remedy this constant supply of waters, I propose the catchwater drain along the verge of Tully and Bracklin as before mentioned, described in Section, N° 78.

This last portion of the bog is well circumstanced in being bounded by lands from Cuhis to Ballynegar, where limestone and manuring gravel can be had in great abundance; I would, however, recommend a central line of road with off-branches to Tully and Ballyglass for the purpose of bringing in manure, as the great depth of the bog precludes the possibility of raising the under-stratum to the surface.

The proprietors of these bogs are Lords Dillon and Mount Sandford, with A. French, O O'Connor, M. O'Connor, and John Farrell, Esquires.

N° 1.
Mr. Longfield's Report on Lough Gara District.

ESTIMATE of the proposed Works on Sixth Division.

N° of Section.		Average Sinking	Width at Bottom	Width at Top	Rate per Perch	Amount.		
						£	s.	d.
67.	To making 1,480 perches of main drain along the central line from near Cloonshanville to the bridge of Cloonarra - - - - -	8.	3	11.	7/3	536	10	—
	To making a similar drain, parallel to the above, at ten perches distance, the space between to be occupied by a new road - - -	8.	3.	11.	7/3	536	10	—
68.	To 110 perches of main drain, commencing at the stream near the small wood of Cloonfinlass	8.	3.	11.	7/3.	39	17	6
	To opening 66 perches of the stream from the gully-hole at the point of Cloonfinlass - -	6.	3.	9.	4/8.	15	8	—
	To making 185 perches of main drain up the vale from Cloonfinlass to the centre line, N° 67 - - - - - - -	9.	3.	12.	11/.	101	15	—
	To making 130 perches of main drain, in continuation towards Tully - - - -	9.	3.	12.	11/.	71	10	—
	To making 105 perches of main drain in continuation, ending at Tully - - - -	7.	3.	10.	5/10.	30	12	6
	To opening 68 perches of the stream issuing out of the low deep bog of Tully, ending at Mr. Farrell's drain - - - - - -	6.	3.	9.	4/8.	15	17	4
	To making 287 perches of main drain in the deep shaking bog of Ballyglass - - -	12.	3.	15.	24/6.	351	11	6
69.	To deepening and widening 200 perches of the stream between the bottom of Leitrim and Mullen - - - - - - - -	5.	3.	8.	3/6.	35	—	—
	To opening 10 perches of stream issuing from the great vale in the bog of Leitrim - -	6.	3.	9.	4/8	4	8	8
	To making 100 perches of main drain in said vale, and opening the subterraneous water communications - - - - -	9.	3.	12.	11/.	55	—	—
	To making 48 perches of main drain in continuation, to the centre line, N° 67 - - -	10.	3.	13.	15/7.	37	8	—
70.	To making 154 perches of main drain from N° 69, up Cush to the road at the foot of Leitrim	8.	3.	11.	7/3.	55	16	6
71.	To opening 230 perches of the outlet stream from the little wood of Cloonfinlass to the centre line, N° 67. - - - - -	6.	3.	9.	4/8.	53	13	4
72.	To sinking 72 perches of the eastern road drain from Cloonfinlass bridge to the end of the mill road. Average 3 feet additional sinking -	- -	- -	- -	3/.	10	16	—
	To making 93 perches of main drain from the end of the said mill road, along the bounds between the bogs of Cloonshever and Cloonfinlass - - - - - - - - -	8.	3.	11.	7/3.	47	14	3
	To making 14 perches of main drain in continuation - - - - - - -	10.	3.	13.	15/7.	10	18	2
	To making 14 perches of main drain in continuation - - - - - - -	12.	3.	15.	24/6.	17	3	—
	To making 140 perches of main drain in continuation - - - - - - -	10.	3.	13.	15/7.	109	1	8
73.	To deepening 90 perches of present stream from the north point of Cloonshever to the junction of the central line of road. Average 4 feet additional sinking in clay and gravel - -	- -	- -	- -	5/.	22	10	—
	To 66 perches of main drain in continuation of ditto - - - - - - -	9.	3.	12.	11/.	36	6	—
	To 40 perches of main drain in continuation -	10.	3.	13.	15/7.	31	3	4
	To 170 perches of main drain in continuation -	8.	3.	11.	7/3.	61	12	6
74.	To deepening 74 perches of present land drain on south side of Cloonshever - - -	- -	- -	- -	2/.	7	8	—

Nº 1.
Mr. Longfield's Report on Lough Gara District.

Estimate of the proposed Works on Sixth Division—*continued.*

Nº of Section	——	Average Sinking	Width at Bottom.	Width at Top	Rate per Perch	Amount.
						£. *s.* *d.*
74.	To making 204 perches of main drain in continuation of ditto, under Cloonshever, Derreen Darra, and across to the Brecklin mill stream	8.	3.	11.	7/3.	73 19 —
75.	To making 226 perches of main drain in the bog of Baslick - - - - - - -	8.	3.	11.	7/3.	81 18 6
76.	To making 81 perches of main drain under the east side of Cloonarra, and across bog to Kye and Baslick - - - - - - -	7.	3.	10.	5/10	23 12 6
	To making 250 perches of main drain in continuation to the stream at Baslick - -	8.	3.	11.	7/3.	90 12 6
77.	To sinking 45 perches of drain from the river at Tarmon to the high Red bog - - - -	- -	- -	- -	3/.	6 15 —
	To making 13 perches of main drain in continuation - - - - - - - -	10.	3.	13.	15/7.	10 2 7
	To making 211 perches of main drain in continuation - - - - - - - -	12.	3.	15.	24/6.	258 9 6
	To making 56 perches of main drain, in continuation along the verge of Ballindrimly - -	7.	3.	10.	5/10	16 6 8
78.	To deepening 86 perches of present stream along the east side of Tully - - - - -	- -	- -	-	3/-	6 18 —
	To making 80 perches of catchwater drain in continuation - - - - - - -	7.	3.	10.	5/10	23 6 8
	To making 90 perches of deep catchwater drain under Tully and Brecklin - - - - -	9.	3.	12.	11/.	49 10 —
	To making 110 perches of deep catchwater drain, ending at the outlet stream of Brecklin - -	6.	3.	9.	4/8.	25 13 4
	MINOR DRAINS, &c.					
	To making 18,000 perches of minor drains in great bog of Frenchpark and Castlerea - -	6.	3.	9.	4/8.	4,200 — —
	To making 1,000 perches of minor drains in the bog of Moor - - - - - - -	6.	3.	9.	4/8.	233 6 8
	To making 3,200 perches of minor drains in the bogs of Ballyglass, &c. - - - - -	6.	3.	9.	4/8.	746 13 4
	To surface drainage for 4,275 acres, at 8 perches, or 16 *s.* per acre - - - - - - -	- -	- -	- -	- -	3,420 — —
	To making 4,500 perches of new roads in the great bog of Frenchpark, at 6*s.* 6*d.* per perch	- -	- -	- -	- -	1,462 10 —
	To making 480 perches of new roads in Ballyglass bog, at 6*s.* 6*d.* - - - - - -	- -	- -	- -	- -	156 — —
					£.	13,181 5 6
	Contingencies and unforeseen Expenses, 20 per cent. - - - -					2,636 5 1
	Total Expenses in Sixth Division - - - - - - -				£.	15,817 10 7

A. R.
3,459. 2. Irish.

SEVENTH DIVISION, comprehending the Bogs of Frenchpark, Cloonsbanville, Balla, Ardagh, Doonean, Scurbeg, Mantua, Ballinagar, Manture, &c. &c. containing A. 5,603. 3. 11. including the Turloghs of Mantua, and the Lake of Loughbally.

THIS Division of bogs is bounded on the North by Frenchpark, Balla and Knockglass, on the South by Mantua, Brecklin and the Turloghs, on the east by Doonean and Scurbeg, and on the west by Cloonshanville, Hermitage and Ballinagar. The aggregate quantity of these bogs is formed of numerous divisions of from 50 to 600 Irish acres; the chief of which are, 1st. Cloonshanville and Frenchpark bogs. 2d. Tartan, Doonean, Bella, and Mantua bogs. 3d. Scurbeg and Mantua bog. 4th. Brecklin bogs, and 5th. the bogs of Carraglenanaghton, Ballinagar and Hermitage.

The

N° 1 Mr Longfield's Report on Lough Gara Diſtrict.

The first of these denominations comprises the Frenchpark and Cloonshanville bog, containing 530 Irish acres of deep bog, which in many parts is a shaking quagmire. It is about a mile square, and of a pretty regular shape; its boundary on the east and south sides, is the river from Cloonshanville to Mantua and Balla, which for a distance of above two miles is nearly a dead level of sufficient depth and breadth for the purposes of navigation, so that the surface adjoining two sides of this large bog might be abundantly supplied with gravel from Mantue; this river operates also, as the best possible outlet, and receives the whole of the bog waters. The other two sides of this bog are bounded by the abbey lands of Cloonshanville and by Frenchpark, which are well known to be as fine limestone lands as any in the country.

These lands rise from the before mentioned river on the east and south sides, and continue rising with a gradual ascent to the summit near Frenchpark, as described in Section, N° 80, from which point the bog falls on all sides with a gradual declination to its boundary river; in consequence of which, there is no necessity for opening any deep main tap drains, but to divide the surface with the proposed system of minor and surface drains, and to open the interior by the lines of road which I have marked on the map.

The next subdivision are the bogs of Doonean, Tartan, Bella and Manture, containing 1,163 acres 6 perches English, lying between Bella and Tartan, and bounded on the south 718 Irish acres. by a stream from Tartan to Loughbally, called Clash-abrookaun. The great ventage of this part of the bogs is Loughbally, and the river (commonly called the Breeogue river) running from Mantuic to Breeogue; into these outlets the two principal streams discharge themselves, the first from Doonean to Drishacon bridge, and the second from Tartan to Loughbally.

The stream from Droonean by Drishacon falls into the Breeogne river, a little below Balla bridge, from which point to the bridge of Drishacon, it is nearly choaked up, and has very little fall, as described in Section, N° 81, from Drishacon bridge, it is also choaked in many places, and would require a general scouring and sinking to the point of Doonean, from whence the line of Section is directed through the Red bog to Clash-abrookaun, into which it discharges a part of its waters.

The second line of outlet stream is called Clash-a-brookaun, which rises at the foot of Scurbeg, and after passing through a very wet shaking scraw on deep Black bog under the lands of Tartan, it passes on the north side of Cloonkeeran and to the foot of Scurbeg, at which point the surface of the bog falls to the Turlogh. This ventage, from its central situation, receives both the surface waters of a great proportion of the bogs, and also the springs that issue from the lands of Tartan and Scur; and therefore I have considered it expedient to lay out a deep main drain the whole way from Cloonkeeran to Scurbeg, and which in the centre will come to the under-stratum of clay and gravel, in a situation where the aid of such manures for the adjoining Red bogs will be indispensable.

In addition to those outlet streams, I have laid out another line of main drain along the south side of the lands of Ardagh, and crossing the new road falls into the great morass at Balla, through the centre of which it is directed to near Balla avenue, where it quits the present course, and falls into a long line of straight drain to the Breeogue river above Balla bridge. The morass through which this line of drainage is directed was formerly a shallow lake of about 48 acres 2 roods 15 perches English measure, which was attempted to be drained by Mr. French of Balla, who for that purpose brought up a deep tap drain from Fenisklin along the side of his avenue, which in some places is sunk 9 feet deep in strong clay and gravel, however, as the excavation at those points (being cut across a hill) became too serious, the work was not finished to the necessary extent of complete drainage of the lake; it is notwithstanding sufficiently dry in summer for the grazing of young cattle, in which Mr. French finds such advantage, that he generally scours the tap drain every year.

It is, however, not necessary to continue the deep sinking of Mr. French's drain, along the avenue of Balla, when the fall of 2 feet 6 inches is taken down at the bridge, but to turn down the long drain by the bog edge to the river above Balla bridge, as described in Section, N° 83.

The next denomination are Scurbeg and Mantua bogs, containing 830 acres 3 roods 513 Irish acres.
36 perches (English), exclusive of the great Turloghs of Mantua, containing 625 acres 386 Irish acres.
1 rood 1 perch (English) more, which I have before mentioned in my general observations, and which is proposed to be drained by the main tap laid out at this division, as described in Section, No. 79. This Section is taken from the surface water of Lough Gara at Breeogue bridge along the river to Balla bridge, which is for the whole of the way to near Balla, a wide and deep river on a dead level; immediately at Balla, there is a small fall in summer time of 2 feet 6 inches, but above that point it is quite a dead level to Loughbally, and up the rivers towards Cloonshanville and Ballinegar for a considerable distance.

The Section line is directed from Balla, along the main river to the lake of Loughbally, and across to the stream on the south side of Cloonkeeran, which is the chief ventage for this 830 acres 3 roods 36 perches (English), of Red bog; and it is also the ventage I 513 Irish acres. propose for draining the Turloughs of Mantua. Along this stream, the line of section is taken to its source, and across the summit of the Red bog to the Turlogh at Carrigeen, which for an extent of 615 acres 2 roods 5 perches (English), of fine profitable ground, 380 Irish acres. was in Auguſt last entirely covered with water, the surface of which was 18 feet 6 inches above Lough Gara, and its general depth, as far as I could learn, was only from 3 to 6 feet.

N° 1.
Mr Longfield's Report on Lough Gara District.

From the south verge of Cloonkeeran, I propose to deepen and widen the outlet stream to its source, at which point the sinking will not exceed 10 feet, although 9 feet 6 inches below the surface water of the Turlogh, and within 130 perches of its verges at Carrigeen; along this 130 perches, I propose to continue the line of tap to the Turlogh, where I propose the bottom of it to be seven feet below the surface water in August last; the greatest depth of sinking in this 130 perches will be 20 feet below the present surface of the bog; but on opening the tap to the commencement of that deep sinking, I calculate the bog, (being very wet and deep) will subside at least one-third, so that the actual excavation at the summit of the bog, will not exceed 12 or 13 feet; however, knowing the fallacy of estimates in general, and not being able to foresee many difficulties that might probably occur in such precarious works, I have resolved to be at the right side, by estimating the expenses according to the full extent of excavation, without making any allowance for the subsiding of the bog.

This line of drain would, by getting seven feet under the surface of the Turlogh, reduce its waters to such a small portion that little would remain but what might lie in the small hollows about the gullies, and prevent the recurrence of any considerable inundation; it is, however, probable, that on lowering the great body of the waters, it will be found necessary to lay out several lines of small conducting drains through the Turlogh to communicate with this great outlet.

Section, N° 84, is a line of main drain laid out from the Turlogh at Mantua, along the verge of Cloonamotha, and partly falling into the main top drain, N° 79.

171 Irish acres.
50 Irish acres.

The fourth denomination of this division are the bogs of Bracklin, containing A. 276. 3. 38. (English measure) of Red bog, including about A. 80. 3. 38. (English) which is cut away along the verge of Bracklin and Mantua. This bog is bounded on the north by the lake of Loughbally, on the south by Bracklin, on the east by the Cloonkeeran stream, and on the west by the island and great scraw of Loughbally, and is possessed of such ample falls on all sides as not to require any deep tap drain. I have made a Section of this bog, commencing at the bridge of Cloonkeeran, and following the road across the bog to Bracklin, then turning along the bog edge follows the land drain of Bracklin to the great scraw of Loughbally, which although nearly level with the surface water in Lough Garra, is however formed of Black bog near 30 feet deep; this scraw alone contains A. 64. 3. 6. (English) which at this moment is not worth five shillings per acre; but which, if drained, even to the level of the summer water of Lough Garra, would turn out, with proper cultivation by burning, to be as good bottom pasture and meadow as any in the country. The surface of it is nearly level, and is 3 feet 8 inches above the summer water of Lough Garra; therefore, if by the removal of the weir at Currymore, the Lough would be kept down to that level (of which no doubt can exist) it would be sufficiently low to drain not only this scraw, but near A. 485. 3. 32. (English) of similar bottoms and scraws along the Breeogue river, independent of its influence on the river Lung and other streams connected with Lough Garra, as before noticed in my general observations, page 6.

40 Irish acres.

300 Irish acres.

The last denomination of this division are the bogs of Carragunanaghton, Ballinegar and Hermitage, containing A. 890. 3. 25. English measure, including some fine firm pasturable Red and Black bogs at Curragunacreeha, Carragunanaghton, &c. &c. The largest portion of actual deep Red bog in this denomination is the bog of Hermitage, belonging to Owen O'Connor, Esq. which is three parts bounded by the nearly dead water streams from Ballinagar and Cloonshanville, to which the actual Red Bogs have a good fall, as may be seen by Section, N° 88, which describes a fall from the summit to the river of about 20 feet; however, the bog edge, under the land, and immediately below Hermitage house, does not afford this good fall (as may be seen by Section, N° 87); on the contrary, in time of floods, the backwater from Lough Garra rises from one to two feet in the drains and bog holes along the verge of Hermitage, so that were it necessary it would not be difficult to insulate the bog by cutting the whole of it off by a land drain on the level of the summer water of Lough Garra, the lowering of which would most materially effect the drainage of this portion of the district.

550 Irish acres.

The line of Section, N° 88, is a proposed main drain through the centre of Hermitage bog, and the line, N° 87, is a Section of land drain communicating at each extremity with the boundary rivers. In addition to these lines of drainage, and the improvements of straightening and sinking the boundary rivers, I have only to recommend a system of minor and surface drains falling into them.

The remainder of this portion are the bogs of Carageen-a-creeha and Carrageen-a-naghton, containing near 485 English acres, of fine Red and Black pasturable bogs, a great part of which is at this moment nearly dry enough for any agricultural purposes, being subdivided by drains running the whole way from Carrageen-a-creeha to Carrageen-a-naghton, laid out at from 15 to 20 perches asunder. These drains, which were made by the late Mr. Grace of Mantua, if kept open and assisted by a few cross ones, would (although of small dimension) be sufficient to reduce the higher parts of this portion to perfect consolidation. However, from the present bad state of the external ventages and land drains, it is impossible to drain the lower and more valuable Black bogs which are adjoining, without taking down the fall at Balla Bridge, and lowering Loughbally, as mentioned in my general observations. Presuming this plan to be adopted, I have laid out a line of main drain through the great scraw of Loughbally (containing A. 65. 2. 16. English measure) and continuing the same under the lands of Bracklin to the new road, along which I propose it should run until it

300 Irish acres.

A. R.
40. 2 Irish.

falls

falls into the outlet stream at Cloonkeeran, as described in Section, N° 85 This line will completely surround the Red bog of Loughbally, to which it will act as a main ventage, and also as a Catchwater drain under Bricklin. Connected with this line of main drain, I have laid out another line up the stream of Carrageen-a-creeha, along the bog edge and old drain to the cross-stick over the stream from Ballinagar, as described by Section, N° 86, being the last of that description I mean to recommend in those bogs. The proprietors of which are Owen O'Connor, Paul Davis, Arthur French, Edward French, Guy Lloyd, and Oliver Grace, Esquires.

N° 1.
Mr. Longfield's Report on Lough Gara District.

ESTIMATE of the proposed Works on Seventh Division.

N° of Section	———	Average Sinking	Width at Bottom	Width at Top	Rate per Perch	Amount.		
						£.	s.	d.
79.	To making 100 perches of entire new cut above and below Bella bridge, average 147 feet (say yards) to the remaining perch, at 4*d*. per yard	7.	10.	17.	£ 2. 9s.	245	—	—
	To building a new arch to said bridge of 10 feet span	- -	- -	- -	- -	50	—	—
	To sinking and widening 60 perches of present stream between Cloonkeran and Cloothnamona, ending at the point A.	6.	3.	9.	4/8	14	—	—
	To making 80 perches of deep new cut in continuation, through the low vein in the bog, north of Mantua, to tap the turlogh at Carrageen	10.	3.	13.	15/7.	62	6	8
	To making 92 perches deep new cut in continuation	15.	3.	18.	40/.	184	—	—
	To making 40 perches of deep new cut in continuation, ending at the point B.	13.	3.	16.	28/.	56	—	—
80.	To making 170 perches of catchwater drain, between the lands of Frenchpark and the Red bog to the point C.	6.	3.	9.	4/8.	38	19	2
	To making 147 perches of catchwater drain, running partly in Red bog to near the abbey at D.	7.	3.	10.	5/10.	45	6	6
	To deepening 90 perches of the present stream round by the abbey of Cloonshanville, about 1 foot 6 inches	- -	- -	- -	2/.	9	—	—
81.	To deepening 100 perches of the present stream at Drishacon	- -	- -	- -	3/.	15	—	—
	To deepening 90 perches of the present stream above and below the bridge of Drishacon	- -	- -	- -	3/.	13	10	—
	To sinking 122 perches of the present stream and drain from E. to F. between the bog and land of Dooneau	6.	3.	9.	4/8.	27	19	2
	To making 225 perches of main drain from Dooneau, across Red bog, to Clash-a-brookaun, at the point G.	8.	3.	11.	7/3.	81	11	3
82	To sinking 94 perches of the Clash-a brookaun stream, from Cloonkeeran to the point G.	7	3.	10.	5/10.	28	19	8
	To making 340 perches of main drain up Clash-a-brookaun, from G. to H.	8.	3.	11.	7/3.	123	5	—
	To making 100 perches of main drain in continuation to the turlogh	6.	3.	9.	4/8.	23	6	8
83.	To sinking 146 perches of main drain from the river near Bella bridge, to near Bella house, as a tap to the morass	7.	3.	10.	5/10.	42	11	8
	To making 98 perches of new main drain in continuation, across the morass to Ardagh	6.	3	9.	4/8.	22	17	4
	To scouring 31 perches of present drain, to the bridge on the new road at Ardagh	- -	- -	- -	2/.	3	2	—
	To deepening 80 perches of present drain, to the bridge on the south side of Ardagh	- -	- -	- -	3/.	12	—	—

Nº 1.
Mr Longfield's Report on Lough Gara District.

Estimate of the proposed Works on Seventh Division—*continued.*

Nº of Section.	——	Average Sinking.	Width at Bottom	Width at Top.	Rate per Perch	£.	s.	d.
83.	To making 69 perches of main drain across the Red bog, from Ardagh to the main line, Nº 81. - - - - - - -	7.	3.	10.	5/10.	20	2	6
84.	To making 326 perches of land drain along the verge of Clouthnamona and Mantua bogs to the turlogh - - - - - -	6.	3.	9.	4/8.	78	8	—
85.	To making 124 perches of main drain, parallel to the new road, from the south bridge of Cloonkeeran to the point I. - - -	7.	3.	10.	5/10.	36	3	4
	To making 134 perches of main drain, along the verge of Bracklin to the point J. - -	8.	3.	11.	7/3.	48	11	6
	To deepening 132 perches of present drain from the point J. to K. - - - - - -	- -	- -	- -	2/.	13	4	—
	To making 136 perches of main drain through the great scraw - - - - - -	4.	6.	10	4/.	27	4	—
86.	To sinking 149 perches of present drain from the point K. to L. - - - - - -	6.	3.	9.	4/8.	39	14	8
	To sinking 264 perches of present drain at Carrageenacreeha, from the point L. to M. at the Ballinager stream - - - -	6.	3.	9.	4/8.	62	14	—
87.	To sinking and widening 260 perches of present drain under Hermitage, from the Ballinagar stream near the point M. to the points N. and O. - - - - - - - -	- -	- -	- -	5/	65	—	—
88.	To making 179 perches of central main drain in the bog of Hermitage - - - -	9.	3.	12.	11/.	98	9	—
	MINOR DRAINS, &c.							
	To 3,770 perches of minor drains in the bog between Cloonshanville and Manture - -	6.	3.	9.	4/8.	879	13	4
	To 1,650 perches of minor drains in Hermitage bog - - - - - - - -	6.	3.	9.	4/8.	385	—	—
	To 650 perches of minor drains, in part of Knockglass bay - - - - - -	6	3.	9.	4/8	151	13	4
	To 3,270 perches of minor drains in Tartan, Doonean and Bella bogs - - - -	6.	3.	9.	4/8.	763	—	—
	To 3,000 perches of minor drains in Mantua and Scurbeg bogs - - - - -	6.	3.	9.	4/8.	700	—	—
	To 1,280 perches of minor drains in Bracklin bogs - - - - - - - -	6.	3.	9.	4/8.	298	13	4
	To 470 perches of minor drains in bog, between Loughbally and main river - - - -	6.	3.	9.	4/8.	109	13	4
	To 600 perches of minor drains in bog of Carrageen-a-naghton - - - - -	6.	3.	9.	4/8	140	—	—
	To surface drainage for 3,459 acres, at 8 perches, or 16 shillings per acre - - - -	- -	- -	- -	- -	2,767	4	—
	To making 1,200 perches of new roads, at 6*s.* 6*d.* per perch - - - - - - -	- -	- -	- -	- -	390	—	—
					£.	8,173	3	5
	Contingencies and unforeseen Expenses, 20 per cent. - - -					1,634	12	8
	Total Expenses in Seventh Division - - - - -				£	9,807	16	1

EIGHTH

EIGHTH DIVISION, comprehending the Bogs of Kilnamanagh, Brecogue, Fenisklin, Toneroe, Knockglass, Camlin, Lugnagun, Granny, Loam, and Knockroe; containing A. 3,792. 1. 30. English Measure.

N° 1.
Mr Longfield's Report on Lough Gara District.
A R
2,341. 1.
Irish Measure.

THIS Division of Bogs lies chiefly southward and eastward of Brecogue bridge, extending from east to west about 4½ miles, without any intermission except the ridge of land called Fullaghan, that separates the eastern and western denominations.

The principal outlet of this Division is the Brecogue river, running from Balla bridge to Lough Gara, which being a dead water on a level with the Lough, is the lowest point of ventage in the country. Into this river falls the discharging streams of the western end, the chief of which is called the Fenisklin stream; this stream rises in a large slough under the lands of Tully, and after a run of two miles falls into the main river about a mile above Brecogue river, having a fall of 14 feet 8 inches, as described in Section, N° 89. Along the whole line of this section the stream runs through a great vale of deep Black bog, which in many places, particularly at Carnaveagh, is literally a shaking quagmire; it therefore becomes indispensably necessary to open its course by a main drain four feet wide at bottom, from the Brecogue river to the point A. at Carnaveagh. The first mile of this drain, under Fenisklin, cannot be sunk above five or six feet, as the fall to the Brecogue river will not admit it; but above Fenisklin, and through the scraws of Tully, it may be increased to eight feet, which will be sufficient to come to the gravel at Carniveagh.

The next stream of any consequence rises in the high bog of Camlin, and runs through Toneroe bog (partly subterraneously) having an ample fall of 40 feet in about a mile; and emptying into the stream at Toneroe, runs under Lacken bridge and into the Brecogue river, and near Lough Gara. The falls of this outlet stream are described by Section, N° 90. In the eastern end of this division, there is another ventage stream, which rises in the bog of Loam 132 feet above Lough Gara, and taking a circuitous course through Lugnagun bog, in which it runs partly subterraneous, passes under the new bridge at Lugnagun to the bridge at Beahea, with a fall of 111 feet in about two miles (as appears by Section, N° 91.) from whence it falls down by Toneroe to Lacklin, where it joins the outlet stream from Camlin.

This stream is formed by very strong springs issuing from the lands of Loam, and runs pretty rapid for about a quarter of a mile, where it forms a slough and sinks. Again, it appears that about 40 perches distance, in a very diminished stream; consequently, a portion of its waters descending into the slough, must be carried off by subterraneous passages, which probably communicate with other waters running eastwardly towards the Shannon.

At the time I levelled this stream, its supply was merely from the springs of Loam, and appeared to me to have ample vent subterraneously; but from the very bad state of Loam bog, it is evident the passages are insufficient to vent the winter waters, which occasion an annual visitation of flood in the lower parts of the bog, that continues until filtered off in May or June, and even in that period it is never sufficiently dry for any profitable purposes.

To remedy this evil, I propose to give ample vent to the whole of the springs of Loam by a new main drain from Loam to Lugnagun, at an average of eight or nine feet sinking (except along the subterraneous course through the high ridge bog, where it will require to be sunk 15 feet) and to continue improving the present stream by additional sinking of about two feet along the bottom of Lugnagun, to the new bridge, as described by Section, N° 91.

There are two other streams of less importance than those I have mentioned, but which will also act as outlets for a portion of the minor and surface drainage of the bogs; one runs northward of Beahea bog, with considerable fall (as described in Section, N° 93.) and empties into Lough Gara; the other rises in Granny bog and falls into Caletown lock, running eastward to the Shannon. The falls of this stream are described in Section, N° 92, by which there appears a fall of 65 feet from the summit of the bog to the Lough at Caletown, and along which I propose to open a good main drain from C. to E. which will partly discharge its waters into the Lugnagun stream, as described by the said Section. With respect to the roads, there were not any through those bogs until lately that a road has been made across Lugnagun bog, being part of a line intended to shorten the road to Boyle.

Mr. Irwin, of Camlin, has laid out a road from Brecogue bridge to join the present one at Camlin, which will be peculiarly adapted to forward bog improvements, as it runs nearly central through the western division of this tract; last summer the entire line was laid out, and the part next Brecogue gravelled. Hitherto there has been little or nothing done to reclaim those extensive tracts, although the greatest inducements exist, there being ample falls, and the advantage of most excellent manuring gravel. The eastern portion at Loam and Lugnagun has been totally neglected; and it is probable the western part would have remained in the same state where it not for a change of interest in the property of a large tract of it being purchased from Lord Dundas (an absentee) by Mr. Irwin, a resident landholder, who has commenced his bog improvements, and from the indefatigable

N° 1.
[illegible]
[illegible]

exertions of that gentleman, there is every reason to expect a rapid progress will be made.

The new road he is now making will open a useful line of communication for his tenantry, and greatly facilitate the graveling of a large portion of dry bog. Mr. Irwin has also commenced making drains in the high bog of Camlin; however, his endeavours there will be of little or no avail, until the line of main drain designed upon Section, N° 90, shall be effected.

This line is the boundary between Mr. Irwin and Lord Lorton, and therefore it is not probable it will be opened by the proprietors to the extent that I would recommend, necessary to effect a radical change in so deep and wet a bog; a moiety of the expense would exceed the ability of Lord Lorton's poor tenantry on one side, and the whole cost would probably be thought too great to be borne by an individual on the other, who could only expect to derive half the benefit of such improvement.

A part of this drain was scoured in June and July 1810, and the bog stuff was thrown promiscuously on each side; and when I took the levels of it in last July, there was a surprising growth of sappy long grass and large tufts of sorrel and other herbage on Mr Irwin's side, where cattle could not be conveniently brought; but on the opposite side, the poor tenant residing in Dereen island was enabled by the favourable season to conduct his cattle to it, and such was the peculiar sweetness of the herbage, that they fed on it with astonishing eagerness. This growth of herbage being produced by the effect of drainage, and the exposure of the bog moss to atmospheric air, clearly demonstrates what might be effected by that simple operation. In this division, as well as other parts of the district, there are many bogs where drainage may be effected by minor and surface drains only, particularly the bogs of Kilnemanagh and Callow adjoining the Breogue river, which are generally firm and possessed of ample falls. There are many judicious lines of drain in these bogs made by Mr. French, who has thereby been enabled to improve upwards of 20 acres adjoining the demesne, the greater part of which is now laid down in pasture. Under the lands of Callow there is a small lake, from which issues a stream falling into the Breogue river at Kilnemanagh; this stream is at present very insufficient to the discharge of its waters, and therefore I propose to deepen and widen it the whole way from the lake to the road. The remainder of the bog may be drained by minor and surface drains, communicating with Mr. French's main drain, and falling into the streams at Callow and the Breogue river. In addition to the Sections I have given of the proposed main drains in this Division, I beg leave to subjoin Section, N° 94, of the new bog road at Lugnagun, which I shew in explanation of one of the many curious instances of the growth of bog above the under-stratum on which it rests; which proves to a demonstration that bog moss, by its retentive powers, will vegetate, not only in the hollows and cavities of the earth, but also on the sloping sides of the steepest hills (as further shewn by Sections, N^os 23 and 25, in this particular case). It is discovered that a great mass of Red bog, from twenty to thirty feet deep, rests on two sloping banks of limestone gravel; the surface of the bog on one side rising above the key stone of the new bridge at Lugnagun, fifty-one feet in eighty-two perches, and on the other side, thirty-three feet in seventy-four perches. There is no break whatever between the bog and land at Granny where this section commences, on the contrary, the cattle feed up to the edge of the heath, and the ridge of the land of Granny, which is half a mile long, produces on the south side the finest grazing, and on the north side it has produced one of the deepest and wettest bogs in the country; its under strata is composed of the best limestone and manuring gravels.

Proposed Main Drains.

N° 89 shews the proposed main drain from Breogue river to Knockglass bog, sinking 9 feet below the slough under Tully, and carrying on that depth of sinking along the verge of Knockglass bog to Camlin. From the point A, on this section, I propose a main drain (Section, N° 90) up a stream in a Finisklin bog to a small Lough, and continuing across the bog to Toneroe at B, where it will have a particular fall and discharge into the outlet stream to the old mill site. From B, I propose a main tap drain to the high bog of Camlin, along a line of subterraneous streams and springs to the summit of the bog, where I propose to sink 12 feet; the bog here is excessive wet and shaking, and of a depth of 35 feet, but having a fall of above 40 feet to the outlet, it can be drained even to the under-stratum, if necessary.

Section, N° 91, represents the fall of the stream from Loam to Lugnagun, and also the depth of its proposed new course, the sinking of which will average 8 or 9 feet, except where the stream runs subterraneously through high bog, and there I propose it should be 15 feet sinking for a short distance. N° 92 is a Section of a main drain commencing at the point C, N° 91, and crossing the high bog of Granny, falls into the stream from Thronagry to Catetown Lough, and into which it discharges the chief of its waters, having but a partial fall to the proposed main, N° 91. Section, N° 93, is a proposed main drain, which commencing at D, N° 91, passes through the Red bog of Loam to the new road, and falls from thence to the stream running to Killaraght bridge; the drain will empty into the main, N° 91, at the point D, between which and the new road it will receive all the bog waters. From the new road, this main drain will discharge to the Killaraght stream, so that

N° 1.
Mr Longfield's Report on Lough Gara District.

that the said new road will be the summit and centre of the line. Section, N° 94, is of the new road across Lugnagun bog, as before described. N° 95 commences at this river about one mile above Brecogue bridge, and crosses the centre of Knockglass, Drishacon and part of Finisklin bogs to the lands of Knockglass, where it falls into an outlet drain, which will carry the waters to the main outlet stream at Carnaveagh. The summit of this bog, between Drishacon and Finisklin, is 23 feet 4 inches above Lough Garra, from which there is a fall on the east to Brecogue river, and on the west of Knockglass.

The average sinking of the central main will be 10 feet, which will be sufficient to touch the gravel for a distance of 40 perches in the widest and wettest part of the bog. Section, N° 96, is a line of main drain, commencing a few perches above Brecogue bridge, and running through the bog of Lacken and Toneroe, till it forms a junction with main drain, N° 90. This main drain passes through Red bog 30 feet deep, and is proposed to be sunk on an average of 12 feet, which, I trust, will be sufficient to reduce the adjoining surface to consolidation.

These eight main lines of drainage is all I deem necessary to recommend as chief outlets to receive and carry off all the waters that may be conducted to them by the many minor and surface drains that will be necessary to reduce the surface to a state fit to receive agricultural improvements.

The want of present internal roads through these bogs, has obliged me to lay out a number of proposed new ones, connected with the islands and peninsulas that afford limestone and manuring gravels, all which will be found marked on the map.

The chief proprietors of these bogs are Lord Lorton, Arthur French, Edmund French, John Irwin, Samuel Irwin, and ——— Elwood, Esquires, between whom there are few determined boundaries.

ESTIMATE of the proposed Works on Eighth Division.

N° of Section.	———	Average Sinking	Width at Bottom	Width at Top.	Rate per Perch.	Amount.		
						£.	s.	d.
89.	To 200 perches sinking the choaked stream at Finisklin to the point A. - - - - -	5.	4.	9.	4/.	40	—	—
	To making 240 perches of main drain in continuation along the bottoms of Carnaveagh -	7.	3.	10.	5/10.	70	—	—
	To making 240 perches of main drain in continuation to the lands of Camlin - - -	8.	3.	11.	7/3.	81	—	—
90.	To sinking 40 perches of stream in bog between Finisklin and Carnaveagh, commencing near the point A. - - - - - - -	6.	3.	9.	4/8.	9	6	8
	To sinking 100 perches of stream to the small lake in Finisklin - - - - - - -	10.	3.	13.	15/7.	77	18	4
	To making 135 perches of main drain from said lake to the outlet stream at B. - - -	9.	3.	12.	11/.	74	5	—
	To opening 130 perches of subterraneous stream from the point towards Camlin - - -	6.	3.	9.	4/8.	34	13	4
	To opening 120 perches of subterraneous stream in continuation - - - - - - -	9.	3.	12.	11/.	66	—	—
	To opening 224 perches of subterraneous stream, ending at the turf banks of Camlin - -	11.	3.	14.	18/2.	203	9	4
91.	To sinking 138 perches of present stream on the south side of Lugnagun; average 2 feet deep -	- -	- -	- -	3/.	20	14	—
	To sinking 60 perches of present stream, ending at the point C. - - - - - - -	8.	3.	11.	7/3.	21	15	—
	To sinking 40 perches of subterraneous stream from the point C. up the deep vale, and through a high ridge of bog in Lugnagun and Knockroe bogs - - - - - -	12.	3.	15.	24/6.	49	—	—
	To sinking 104 perches of subterraneous stream in continuation to the point D. - - -	9.	3.	12.	11/.	57	4	—
	To sinking 43 perches of subterraneous stream, ending at the lands of Loam - - -	6.	3.	9.	4/8.	10	—	8
92.	To making 24 perches of main drain from the point C. towards the point of Granny - -	7.	3.	10	5/10	7	—	—

Estimate of the proposed Works on Eighth Division—*continued.*

N° of Section	———	Average Sinking	Width at Bottom.	Width at Top.	Rate per Perch	Amount.		
						£.	s.	d.
92.	To making 76 perches of main drain in continuation, ending at the stream to Cafetown lough - - - - - - - -	10.	3.	13.	15/7	59	4	4
	To sinking 40 perches of present stream towards Cafetown lough - - - - - -	7.	3.	10	5/10	11	13	4
	To sinking 80 perches of present stream, ending at the point E. - - - - - - -	6.	3.	9.	4/8.	18	13	4
93.	To making 48 perches of main drain from the road between Loam to Lugnagun, towards the point D. - - - - - - - -	8.	3.	11.	7/3.	17	8	—
	To making 40 perches of main drain in continuation - - - - - - - -	10.	3.	13.	15/7.	31	3	4
	To making 56 perches of main drain in continuation to point D. - - - - - -	8.	3.	11.	7/3.	20	6	—
	To making 108 perches of main drain from said road near Lugnagun to the stream on the south side of Ballymore - - - - -	8.	3.	11.	7/3.	39	3	—
95.	To sinking 50 perches of main drain, commencing at the Brecogue river. and proceeding through the centre of the Red bog of Knockglass - - - - - - - -	9.	3.	12	11/.	27	10	—
	To making 80 perches of main drain in continuation - - - - - - - -	11.	3.	14.	18/2	72	13	4
	To making 243 perches of main drain in continuation, ending at Knockglass - -	9.	3.	12.	11/.	133	13	—
96.	To making 36 perches of main drain, commencing at Brecogue river near the bridge - -	8.	3.	11.	7/3.	13	1	—
	To making 160 perches of main drain in continuation to main drain, N° 90. - - -	11.	3.	14.	18/2.	145	6	8
	To widening and deepening 200 perches of outlet stream from the small lough at Callow, by Killnamanagh, to the road near Brecogue bridge - - - - - - - -	- -	- -	- -	3/.	30	—	—
	To widening and deepening 340 perches of Mr. French's central main drain - - - - -	- -	- -	- -	2/.	34	—	—
	MINOR DRAINS, &c.							
	To 800 perches of minor drains in bogs of Killnamanagh and Callow - - - - -	6.	3.	9.	4/8.	186	13	4
	To 200 perches of minor drains in bog west of Brecogue river - - - - - - -	6.	3.	9.	4/8.	46	13	4
	To 1,750 perches of minor drains in Knockglass, Drishacon and Finiskin bogs - - -	6.	3.	9.	4/8.	408	6	8
	To 3,000 perches of minor drains in Lackin, Toneroe and Canibn bogs - - - -	6.	3.	9.	4/8.	700	—	—
	To 2,200 perches of minor drains in Lugnagun and Knockroe bogs - - - - - -	6.	3.	9.	4/8.	466	13	4
	To surface drainage for 2,341 Irish acres, at 8 perches, or 16 *s.* per acre - - - -	- -	- -	- -	- -	1,872	16	—
	To making 600 perches of new roads through the bogs, at 6 *s.* 6 *d.* per perch - - -	- -	- -	- -	- -	195	—	—
					£.	5,352	4	4
	Contingencies and unforeseen Expenses, 20 per cent. - - -				-	1,070	8	10
	Total Expenses in Eighth Division - - - - -				£	6 422	13	2

N° 1.
Mr. Longfield's Report on Lough Gara Diſtrict.

NINTH DIVISION, comprehending the Bogs of Lung, Ardvarna, Baneda, Clooncunny, Creggaun, Cloonmuckanawn, &c. &c.

THIS Division of Bogs is a great mass which adjoins the shores of Lough Garra for above four miles, and containing A. 3,761. 1. 0. English measure. They are situated southward and eastward of Mr. Costello's demesne, and extend from the shores of Lough Garra to within a mile of Ballaghadereen, and also to near the road from Lung bridge towards Frenchpark. 2,322 Irish acres.

These Bogs are divided by the river Lung; the greatest portion being to the south, is intersected by two present lines of road, connected with which I have laid out other branch lines, which will open the interior and communicate with several points, where there is abundance of excellent manuring gravel, particularly at Cloonmuckanawn; the whole of that hill (about three quarters of a mile long and rising high) being composed of that description of materials. The bogs, north of the river Lung, are not very extensive in general, they are however conveniently situated in point of manuring gravels, and many parts of them require little more than surface drainage to prepare them for agricultural improvement, being on all sides bounded by the lowest ventages of the country, namely, the waters of Lough Garra and the river Lung, which are even in flood time considerably below the surface of the actual Red bogs, although the bottoms of Black bog, on both sides of the river Lung, are subject to constant floods.

The main outlet of a great part of these bogs is the river Lung, from Baneda to Lough Garra, between which points, and also to near the mill of Lung (being about three miles) it is on a dead level with the Lough, and in summer time its waters are very little lower than the surface of those considerable tracts of bottom meadow grounds, which I have noticed in my general observations, page 9, to be annually flooded by backwater from Lough Garra; the improvements recommended to lower which will also be of advantage to the several streams that rise in this Division, and which make their way to it and to the river Lung.

The principal road in this Division is that from Rathra to the float, and from thence to the high road from Ballaghadereen north of Lough Garra to Boyle; from this road between Rathra and the float, there is a road now making to Calla, with a view to shorten the distance to Brecogue bridge, &c. &c.

In the north-east part of this Division (which forms a long peninsula running into Lough Garra) there has been another line of road laid out through Lumcloon to the edge of the lake at Clooncunny, where a bridge was intended to be erected over a narrow gut of lake, which, if effected, would materially shorten the distance between Ballaghadereen and Boyle.

Of improvements little or nothing of any consequence has been done to reclaim those bogs, notwithstanding many of them hold out the greatest prospects of success to the improvers, particularly at Armagh, Lumcloon and Clooncunny, where the bogs are mostly dry and firm, and the materials for effectual reclamation are to be had in great abundance at a convenient distance. The tenantry are by no means ignorant of this fact, as I observed some small pieces were inclosed, and rendered highly profitable by gravelling along the verges of the bogs, in general I observed this to be the case, but their efforts never extended beyond the limits of a potatoe garden, owing entirely to the cause I assigned in my former Report, namely, the want of title, and the dread of increasing rent.

These bogs are generally deep, being mostly from 20 to 26 feet, and the under-stratum of those adjoining Lough Garra, I find to be from 20 to 25 feet below the surface water of that lake. The highest part of this Division is on the Lung bog, which rises to 49 feet above Lough Garra, but the general height is from 10 to 24 feet, except Armagh bog, which does not exceed from 6 to 17 feet above Lough Garra, by which it is bounded.

Of these bogs I have given eight different Sections of lines of navigation and main drains from 97 to 104 inclusive, which with the system of minor drains and roads which I have marked on the Map, together with the accompanying surface drains, I trust will be sufficient to prepare the whole fit to receive further agricultural improvement.

N° 97 is a Section of a proposed navigation drain through the bog peninsula at Ballinloughaun, and the small lake called Loughanboy. The bogs of Lumcloon, Armagh and Ballinloughaun, through which this Section is taken, are the lowest bogs I have met with, the bottoms being generally from 22 to 28 feet lower than the surface water of Lough Garra; they are also very wet, and impregnated with a number of springs, to which, and the waters of the lake called Loughanboy, I attribute the very wet state of them, and not to the circumstance of their under-strata being so much below Lough Garra. Loughanboy covers an area of A. 17. 3. 10. English measure, and is 6 feet 4 inches above Lough Garra, 11 Irish acres. it is therefore evident that no subterraneous communication exists between the two lakes; and also furnishes another instance of the retentive quality of deep and wet bogs, the distance between Loughanboy and Lough Garra being only fifty perches. There are no internal manures to be obtained from the under-strata of these bogs; therefore I propose sinking not only this line, but also the line of Section, N° 98, to a navigation size, and to open the drain from Loughanboy to Lumcloon to the same dimensions; the lines 97 and 98

N° 1.
Mr. Longfield's Report on Lough Gara District.

will form a junction at E. by this means the manures from Ballinageeragh and Lumcloon can be conveyed to the interior.

The first good effects of these navigable lines will be the lowering of Loughanboy (which at present is nearly level with the surrounding bog) and they will also bring down the adjoining surface, and create a fall on both sides for the minor and surface drains necessary for their further improvement; however, in the event of Lough Garra falling below the usual summer water, these lines must be dammed up to keep in the necessary depth of water.

The eastern portion of these bogs, being the peninsula of Lumcloon and Armagh, are so far dry and firm, as only to require surface drains to prepare them for levelling and gravelling.—The manuring gravel is convenient and plenty, and what little has been done fully evinces the capability of bringing into immediate profit upwards of an hundred acres of bog at an inconsiderable expense, comparative to the return that would certainly accrue. Section, N° 99, is taken along the float road, from the river Lung to Rathra, and describes the levels of two parallel main drains which I propose on each side of said road, and at a distance of five perches from it. These drains will have a fall of 31 feet 7 inches from the point A. to the river, and the one on the eastern side will communicate with the minor drains falling to the river Lung.

Section, N° 100. This Section commences at the river Lung, about three quarters of a mile above the float, where a small stream falls into the river. I followed up this stream to the centre of the bog for half a mile to its source, and continuing its direction the whole way to the float road, which I find to be a very eligible line for a main tap drain, the natural declination of the bog being every where towards it, and having a fall to the river Lung of 38 feet, besides a partial fall to the road near Rathra; the sinkings of this line will be from 8 to 10 feet. I also recommend a drain along the bog edge at Kielebaneda, to act as a catchwater drain, and to receive the waters which will fall partially to it, and terminating at B, on the map.

Section, N° 101, commences at Lough Garra, and follows up a line of subterraneous stream and cush through the great bog of Rathra to the float road. Along this natural line of ventage I propose to open a main drain, sinking 11 feet at the summit where it is 24 feet above the lake; near this point the drain will touch the gravel at about 11 feet sinking, which will be of material advantage in that situation, being above 80 perches from the nearest land.

Southward of this line of main ventage, there is a stream running from Cloonmuckanawn to Lough Garra, with a fall of 11 feet in half a mile; this line I propose to open to a navigation size, which would greatly improve the very fine grazing cush through which it runs, and also be the means by which the gravels from the hill of Cloonmuckanawn (where there is the greatest plenty) may be boated to Lough Garra, and deposited on the bogs along its shores, and on both sides of the river Lung.

The remainder of this portion of the division extending across the road from Cloomuckanawn mill to Callow mill, being mostly a dry firm bog would not require a main drain; I have therefore only to recommend the minor drains marked on the map, with a proportionate number of surface drains to direct the waters to their natural outlets.

A road should be made from the point where the new one now making is proposed to terminate, across the bog towards Doolaughawn Lough, in order to convey the gravel from Cloonmuckanawn hill, and also another from near the middle of the hill to Lough Garra.

Section, N° 102, commences at the river Lung, about 120 perches above Lung House, and crosses the bog in the direction and along the county bounds terminating at C. This Section is principally shewn as a cross section of Lung bog, the ascent of which from the river Lung is 39 feet, and the descent to main drain, N° 103, being 26 feet 1 inch.

I have laid out the minor drains parallel to this line of section, as they will all be similarly circumstanced in point of fall. I would also recommend a good land drain along the bog edge of Ballinfoyle, discharging into the river Lung at the county bounds, and another along the bog edge of Lung, discharging at the same point. I have also laid out a longitudinal line of road from Ballinfoyle to Baneda, and also a cross road from Kielebaneda to near the river Lung. These roads cross each other in the centre of the bog, and are connected with the gravel at each of their respective commencements and terminations.

Section, N° 103. I have taken this line of Section from the river Lung, along the boundary drain between Lord Dillon and Mr. Costello, to the points C, and D, on the map The rise from the river Lung to the summit, is 36 feet 6 inches in about half a mile, and the fall from said point to D, is 22 feet 8 inches; along this line, I propose a main drain, which will act as a catchwater under the lands of Kielebaneda, and into which some of the principal minor drains will discharge, and also part of the waters of main drain, N° 102.

Section, N° 104. This section describes a line of main ventage from the river Lung near the float road, up the stream to Coolena, and by the verge of Ardvarna bog to the said river opposite Baneda.

Along

N° 1.
Mr Longfield's Report on Lough Gara District.

Along this line I propose to open a main drain, that shall commence and terminate at the river Lung, and act as a complete Land drain under Coolena and Ardvarna, with a complete line of ventage, that in part (along the Lung) is the lowest ventage in the country, being on a dead level with Lough Gara.

I have now detailed the whole of the lines of main ventage and land drains, that I think necessary to recommend in this part of the district.

The chief proprietors of these bogs are A. French, C. Costello, and John Dillon, Esquires.

ESTIMATE of the proposed Works on Ninth Division.

N° of Section	———	Average Sinking	Width at Bottom	Width at Top.	Rate per Perch.	Amount		
						£.	s	d.
97.	To making 80 perches of navigable cut from Lough Garra towards Loughanboy - -	7.	14	21.	24/.	96	—	—
	To making 20 perches of navigable cut in continuation, to Loughanboy - - -	10.	14.	24.	37/.	37	—	—
	To making 80 perches of navigable cut from Loughanboy towards the point E. - -	10.	14.	24.	37/.	148	—	—
	To making 40 perches of navigable cut ending at E. - - - - - - -	12.	14.	26.	63/.	126	—	—
	To making 80 perches of main drain from said point E. to Currabawn - - - -	9.	3.	12.	11/.	44	—	—
	To sinking 60 perches of present stream of Currabawn to Lough Garra - - - -	6.	3.	9.	4/8.	14	—	—
98.	To making 88 perches of navigation cut from the point E. to Lough Garra near Annaghbeg	12.	14.	26.	63/.	277	4	—
99.	To making 12 perches of navigation cut in continuation, to the Lough - - - -	6.	14.	20.	21/.	12	12	—
	To making 270 perches of two parallel main drains on each side of the float road from the river Lung towards Rathra - - -	8.	3.	11.	7/3.	97	17	6
	To making 40 perches of ditto in continuation -	10.	3.	13.	15/7.	31	3	4
	To making 80 perches of ditto in continuation -	12.	3.	15.	24/6.	98	—	—
	To making 80 perches of ditto in continuation -	10.	3.	13.	15/7.	62	6	8
	To making 216 perches of ditto in continuation, and ending at the point A. - - - -	8.	3.	11.	7/3.	78	6	—
	To making 128 perches of ditto in continuation, from the point A. to the small bridge at Rathra - - - - - - - - N. B The lengths of Section 99 are double, in order to include the two parallel drains.	8	3.	11.	7/3.	46	8	—
100.	To making 116 perches of main drain, commencing at the point A. and proceeding through Kielebaneda bog, towards the river Lung - - - - - - - -	10.	3.	13.	15/7.	90	7	8
	To making 80 perches of main drain in continuation - - - - - - -	9.	3.	12.	11/.	44	—	—
	To making 60 perches of main drain in continuation - - - - - - -	8.	3.	11.	7/3.	21	15	—
	To making 80 perches of main drain in continuation - - - - - - -	6.	3.	9.	4/8.	18	13	4
101.	To 147 perches of main drain from the river Lung along the verge of Kielebaneda - -	7.	3.	10.	5/10.	42	17	6
	To 107 perches of main drain to the point D.	6.	3.	9.	4/8.	24	19	4
102.	To making 36 perches of main drain along the county bounds from the river Lung towards Kielebaneda - - - - - -	7.	3.	10	5/10	10	10	—
	To making 100 perches of main drain in continuation - - - - - - -	9.	3.	12.	11/.	55	—	—

N° 1.
Mr Longfield's Report on Lough Gara District.

Estimate of the proposed Works on Ninth Division—*continued.*

N° of Section.	———	Average Sinking	Width at Bottom	Width at Top.	Rate per Perch	Amount. £.	s.	d.
102.	To making 40 perches of main drain in continuation - - - - - - -	8.	3.	11.	7/3	14	10	—
	To making 21 perches of main drain in continuation, ending at the point C. - -	6.	3.	9.	4/8.	4	18	—
103.	To 160 perches of main drain from Lough Garra towards the float road - - - - -	8.	3.	11.	7/3.	58	—	—
	To 80 perches of main drain ending at the float road - - - - - - - -	9.	3.	12.	11/.	44	—	—
104.	To 306 perches of opening present streams round Ardvarna bog - - - - - -	6.	3.	9.	4/8.	72	13	6
	MINOR DRAINS, &c.							
	To 10,000 perches of minor drains in this division - - - - - - -	6.	3.	9.	4/8.	2,333	6	8
	To surface drainage for 2,322 Irish acres, at perches, or 16*s.* per acre - - - -	- -	- -	- -	- -	1,857	12	—
	To making 1,580 perches of new roads, at 6*s.* 6*d.* per perch - - - - - - -	- -	- -	- -	- -	513	10	—
					£.	6,375	10	6
	Contingencies and unforeseen Expenses, 20 per Cent. - - -					1,275	2	1
	Total Expenses in Ninth Division - - - - - -				£.	7,650	12	7

TENTH DIVISION, comprehending the Bogs of Croughan, Ratallen, Rimnabul, and Portobello, containing A. 754. 3. 14. English measure.

466 Irish acres.

THIS division of bogs, although not amounting to 500 Irish acres, is however so nearly approaching to it, as to induce me to include it in the district, particularly as I was obliged to take a survey of it to ascertain the fact, for in appearance (being high and irregular), a stranger to its extent would conclude it contained at least three times the quantity. The situation of this bog is about a quarter of a mile west of the village of Croghan, four miles from Carrick, and seven from Frenchpark. It is enveloped by part of those high fertile limestone lands called the Plains of Boyle; its principal ventages on the east side of Rimabul, are streams falling into gully holes, and carried off by the subterraneous passages of the country; on the south and east sides, there are however, four visible outlet streams, which eventually make their way to the Shannon below Carrick.

The chief of these ventage streams is, that which passes through Carramore bridge, half a mile south of Croghan, and which is the commencement of Section, N° 105. This section describes the rise of said outlet stream from Carramore bridge to its source at the point A, along which it is quite choaked up, so as to require complete widening and sinking; from this point, the section is continued in a circuitous way round the verge of the bog by the letters C, D, E, and F—— at C, the line of section communicates with a small stream that has been lately opened through the lands of Portobello, and which with a little additional sinking will act as a good outlet to that part of the bog. The remainder of the section line, by being opened as proposed as far as F, will operate as a good main receiver, whose waters will partly discharge into the great gully holes of Rattallen and Rimabul, and partly by the outlet C. Section, N° 106, commences at the point A, and takes a central direction for above half a mile to the road near Mr. Kirkwood's, of Hermitage; this is laid out on the acclivity of the bog, in such line, that if sunk to the proposed depth, will effectually dry the lower levels of the bog between it, and the lands of Croghan. &c. inasmuch as it will break and intercept the great fall of water that at present has a tendency that way.

Section, N° 107, is a line taken across the bog of Portobello from the letter B, to D, which will be a good line for a central main drain with a saddle fall, through a part of the bog that is excessive wet and shaking.

N° 108 is a Section commencing at the outlet pipe of Rattallen, and continuing up a small choaked stream to near the village at Keil; the section is then continued along the

present

present drain under the long ridge of Keil, until it forms a junction at G, with the proposed main drain, N° 106. The drain proposed by this line will carry off the bog waters of about fifty acres by the stream from Rattallen to Camlin, and eventually to Lough Garra.

N° 1
Mr. Longfield's Report on Lough Gara District.

In this bog, as well as most all others of the district, very little of improvement has been effected. However, there has been an experiment made, which proves the speculation both practicable and profitable; what I allude to, is a piece of the bog of Rattallen at the point H, containing about two English acres.

This piece, (if my information be correct), was inclosed about nine years ago, and after producing five profitable crops, was let out to grass, in which state it remains at present; and although now rather turning to rushes for want of a top dressing, is admitted to be worth one guinea per acre. The rotation of crops were, first, cabbage plants; second and third, potatoes, which the neighbouring farmers acknowledge to have abundantly paid the expenses of improvement; after which it gave two crops of oats, and is now in the state above described, worth one guinea per Irish acre. This experiment certainly has been made on the verge of the land, where there is abundance of the finest limestone in rock and gravel; but independent of that circumstance, the bog was originally no better in point of nature, than any part of the interior, being a complete Red sponge bog nearly twenty feet deep.

Convenient to the above improvement, and on that part of the line of Section, N° 108, which lies under the hill of Keil, there is at present a tolerable good drain of 6 feet wide, and 4 feet deep, made about 20 years ago, and over which there are several of the same description of bog bridges, which in my former and present Report, are recommended to facilitate the intercourse across the minor and surface drains. These bog bridges, I have alluded to in my general observations (page 34.) observing that they have lasted in a perfect state these last 20 years, and were as good when I saw them, as when they were first formed.

Although this bog is in general both wet and deep, yet it possesses great capability for drainage, and ultimate agricultural improvement: in the attainment of the first object, it is only necessary to observe, that the general summit of this bog is 140 feet above Lough Garra, and 220 feet above the river Shannon near Carrick, from which it is distant but about 4 miles, and into which its principal ventage streams discharge. And in aid of agricultural improvement, it possesses the advantage of being surrounded by some of the finest limestone hills in the country, whose long promontories and small islands extend far into the interior; so that there is no point of the bog that the best manuring gravel cannot be had within 60 perches.

In addition to the section lines of main ventages above described, I have marked on the map the usual number of communicating minor drains, which with the surface drains, rated at 8 to the acre, are all I find necessary to recommend in this bog; the chief proprietors of which are, the Bishop of Elphin, and Guy Lloyd, Esquire.

ESTIMATE of the proposed Works on Tenth Division.

N° of Section	———	Average Sinking.	Width at Bottom.	Width at Top.	Rate per Perch.	Amount.
						£. s. d.
105.	To deepening and widening 260 perches of present stream from Carramore bridge to Portobello, at the point A. - - -	5.	3.	8.	4/.	52 — —
	To making 151 perches of main drain in continuation, to the outlet stream at C. - -	8.	3.	11.	7/3	54 14 9
	To making 205 perches of main drain in the bog of Rinnabul - - - - - -	9.	3.	12.	11/.	112 15 —
	To making 74 perches of main drain in the bog of Ratallen to the point E. - - -	7.	3.	10.	5/10	21 11 8
	To making 112 perches of main drain in continuation to F. - - - - -	10.	3.	13.	15/7.	87 5 4
106.	To making 122 perches of main drain from point A, through Red bog, towards Mr. Kirkwood's	9.	3.	12.	11/.	67 2 —
	To making 80 perches of main drain in continuation - - - - - - -	10.	3.	13.	15/7.	62 6 8
	To making 32 perches of main drain in continuation - - - - - - -	8.	3.	11.	7/3.	11 12 —
	To making 62 perches of main drain ending at the road near Mr. Kirkwood's - -	6.	3.	9.	4/8.	14 9 4
107.	To making 136 perches of main drain through the bog of Ratallen - - - - -	9.	3.	12.	11/.	74 16 —

130.

N° 1.
Mr Longfield's Report on Lough Gara District.

Estimate of the proposed Works on Tenth Division—*continued.*

N° of Section	——	Average Sinking	Width at Bottom	Width at Top	Rate per Perch.	Amount. £.	s.	d.
108.	To scouring 92 perches of drain from small bridge at Larkhill to the limestone quarry at Ratallen - - - - - - - -	- -	- -	- -	3/.	13	16	—
	To deepening 108 perches of present drain along the land of Keigh - - - - - -	- -	- -	- -	3/.	16	4	—
	To making 37 perches of main drain from point of Keigh to junction, N° 106 - - -	8.	3.	11.	7/3.	13	8	3
	MINOR DRAINS, &c.							
	To 1,400 perches of minor drains in this division - - - - - - - -	6.	3.	9.	4/8.	337	10	—
	To surface drainage for 466 Irish acres, at the rate of 8 perches, or 16 *s.* per acre - -	- -	- -	- -	- -	372	16	—
					£	1,312	7	—
	Contingencies and unforeseen Expenses, 20 per Cent. - - -					262	9	5
	Total Expenses in Tenth Division - - - - -				£.	1,574	16	5

A. R.
588. 1
Irish Measure.

ELEVENTH DIVISION, comprehending Drimer, Drummin, and Ballinville Bogs, containing A. 952. 3. 18. English Measure.

THESE Bogs, which comprise the last division of the district, are situated between the before mentioned bogs of Croghan, and the town of Carrick on Shannon, from which they are distant about two miles. In point of depth and wetness, they are circumstanced pretty similar to the bogs of Croghan, except that being much nearer the Shannon, they lie considerably lower. It will be seen by referring to the map, that this tract of bogs is nearly divided by a long ridge of high lands, called Lissadaly, Ballinville, and Drimer, which extend from west to east about a mile and a half, running to within forty perches of the lands of Drumhan. This high land, which is composed of the best limestone and gravel, will be of the utmost importance in effecting the future reclamation of the bogs with which it is connected, inasmuch as it affords an inexhaustible supply that may be diffused over the greater part of their surface; and by having recourse to the exterior lands, and to this central ridge, the aid of manuring gravel can be had within 60 perches of any part of the interior.

The whole of the waters of these bogs fall into the Shannon, in the neighbourhood of Carrick, to which they are conducted by several outlet streams at Ardlavagh, Gardenstown, Drumicool, &c. &c. But the great ventage, for at least three-fourths of the bog, is the stream at the castle of Cambo, which is the only outlet to the two lakes on the south side of Ballinville. A part of the supply to those lakes exhibits an instance of the many subterraneous passages of the rivers and streams of this county. On the north side of these bogs, there are three or four small streams issuing from the lands of Tully and Bunreavagh, and crossing the high road from Croghan to Carrick. These streams unite after passing the road, and forming one rivulet runs to the low bottoms on the north side of the high lands of Ballinville; where being hemmed in on all sides, they become one of those winter lakes called Turloghs, the water of which sinks into swallow holes at that point, and are carried subterraneously for a quarter of a mile to the south side of the hill of Ballinville, where they appear rising out of two large wells, which the country people call fountains, and which are on a level of about 35 feet below the Turlogh on the opposite side of the hill, which is a clear demonstration, that the Turlogh on the north side of Ballinville is the supply to the springs on the south side.

In these bogs, I have taken three lines of section, viz. N°s 109, 110, and 111. The first of these sections commences at A, on the Lissadaly stream, and follows up to the present land drain to the springs and lake on the south side of Ballinville. This line of drain is the boundary of about 80 acres of bog south of Lissadaly, and would require to be resunk and widened, so as to operate as a good catchwater drain under said lands.

About 30 acres of the bog, between this drain and the Lough of Lurrigan, has been irregularly scarified with small surface drains, which has reduced it to a firm state of consolidation. The remainder of this section is taken in a straight line from the Lough at

Ballinville,

Nº 1.
Mr Longfield's Report on Lough Gara Diſtrict.

Ballinville, through the high, deep, and Red bog of Drimer and Dirran to Drumlin, which I propose to open by a good main drain of about 10 feet sinking.

Section, Nº 110. This section is taken completely across the bogs, from near the high road at Knockaharra to the land of Drimer, and across to the outlet river at Camboe; along this line I have no particular improvement to offer, and therefore I have only laid out a minor drain of an average of 8 feet sinking in that direction.

Section, Nº 111, commences at the outlet stream, near Mr. McDonogh's, at Bunreavagh, and continued through the centre of the small bog of Lissadaly to Turlogh, from whence it is carried under the hills of Drummin, through the high bog to the point C. Along this line, I propose a main drain on an average of 10 feet sinking, whose waters will discharge into the Bunreavagh stream on the north, into the Gardenstown stream on the south, and into the Turlogh at Ballinville.

These main drains, together with a proportionate quantity of minor and surface drains, are all, I conceive, requisite to effect the drainage of this tract. It will, however, be necessary, in almost every instance, to open all the present land drains.

The chief proprietors of these bogs are Guy Lloyd, John Farrell, —— Caddle and —— Keogh, Esquires.

ESTIMATE of the proposed Works on Eleventh Division.

Nº of Section.		Average Sinking.	Width at Bottom.	Width at Top.	Rate per Parch.	Amount.		
						£.	s.	d.
109.	To sinking 280 perches of present land drain under Lissadaly, from point A. to the Lough at Ballinville - - - - - - -	- -	- -	- -	3/.	42	—	—
	To making 84 perches of main drain from Ballinville Lough to point B. - - - - -	8	3	11.	7/3.	30	9	—
	To making 160 perches of main drain from point B. to Drumlion - - - - - -	9	3	12.	11/.	88	—	—
110.	To making 200 perches of main drain from the river at Cambor, by the point B. to Drimer	7	3	10.	5/10.	58	6	8
	To making 72 perches of main drain from Drimer, by the point C. to Knockaharra -	7	3	10.	5/10.	21	—	—
111.	To making 130 perches of main drain in the small bog of Lissadaly, between the points E. and D. - - - - - - -	7	3	10.	5/10.	37	18	4
	To making 220 perches of main drain from the point D. to C. - - - - - - - -	7	3	10.	5/10.	64	3	4
	Minor Drains, &c.							
	To making 2,060 perches of minor drains in this Division - - - - - - -	6	3	9.	4/8.	480	13	4
	To surface drainage for 588 Irish acres at eight perches, or sixteen shillings per acre - -	- -	- -	- -	- -	470	8	—
					£.	1,292	18	8
	Contingencies and unforeseen Expenses, £. 20 per Cent.	-	-	-	-	258	11	9
	Total Expenses in Eleventh Division - - - - - - -	-	-	-	£.	1,551	10	5

N° 1.
Mr. Longfield's Report on Lough Gara District.

RECAPITULATION of the ESTIMATES.

DIVISIONS of the DISTRICT.	Expense of proposed Main, Minor, and Surface Drains.			Expense of proposed Improvements on Rivers, and making Navigable Cuts.			Expense of proposed Roads.			TOTAL EXPENSE of all proposed Works.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
First Division - - -	14,097	17	8	4,814	14	1	1,622	8	—	20,534	19	9
Second Division - -	10,352	7	—	1,616	8	5½	858	—	—	12,826	15	5½
Third Division - - -	12,358	17	3½	784	19	—	975	—	—	14,118	16	3½
Fourth Division - -	5,471	13	7	654	13	5	97	10	—	6,223	17	—
Fifth Division - - -	2,193	4	5	157	1	—	470	14	7	2,821	—	—
Sixth Division - - -	13,709	17	—	165	9	7	1,942	4	—	15,817	10	7
Seventh Division - -	8,900	—	6	439	15	7	468	—	—	9,807	16	1
Eighth Division - -	6,053	6	4½	135	6	9½	234	—	—	6,422	13	2
Ninth Division - - -	6,094	5	2	940	3	5	616	4	—	7,650	12	7
Tenth Division - - -	1,574	16	5	-	-	-	-	-	-	1,574	16	5
Eleventh Division - -	1,551	10	5	-	-	-	-	-	-	1,551	10	5
£.	82,357	15	10	9,708	11	4	7,284	—	7	99,350	7	9

OBSERVATIONS on the ESTIMATES.

IN making out the foregoing Estimates, I have allowed the same rates per cubic yard as in the Estimates of the river Brusna District, although the present prices of labour in the counties of Roscommon and Mayo are at least one third less than in the King's or Queen's Counties; but under the impression, that on the actual commencement of bog draining in this district a considerable advance of wages would be made, I conceive it a matter of prudence to make provision for such event, by allowing the prices that similar works have cost along the line of the Grand Canal; and which, I am convinced, would be sufficient to cover any rise in the price of labour, particularly in a country like Roscommon and Mayo, where the population so far exceeds the present sources of employment. On summing up the whole of the Estimates it will be found, they amount to the sum of £ 99,350. 7. 9. for making the necessary navigation, main, minor and surface drains; together with deepening rivers and making roads in A. 49,277. 1. 23. English measure; being something more than forty shillings per English acre, for completing the proposed works; which will reduce the whole to a state fit to receive the further agricultural improvements of gravelling, liming or burning, after which it is but reasonable to suppose the fee of every English acre would be worth at least £. 20. being twenty years purchase at twenty shillings per acre; therefore supposing the gravelling or liming to cost £. 8. per acre, in addition to the £. 2. for drainage, there will remain a profit to the improver of £. 10. more, provided he is alreadypossessed of the fee of the bogs to be reclaimed.

The system of irrigation (which I know to be always attended with the most beneficial effects) I have constantly kept in view; but owing to the principal waters of the Lough Gara District, being all on low levels, and the adjoining bogs rising abruptly above them, I found it impossible to obtain a command of water at a moderate expense, that could be turned over the surface of any considerable quantity of bog. There is also another impediment to the adoption of a general system of irrigation, namely, the undulations of the bogs, and the numerous islands, low cushes, and subterraneous passages, by which they are intersected; and therefore the only expedient that can be generally resorted to is, to form numerous small reservoirs in high situations, into which the springs of the adjoining lands may be turned in winter time, and passed through the bog drains in summer.

Reduced general Maps.

IN obedience to your instructions I herewith lay before you two reduced Maps, by which the Lough Garra District is divided into two large denominations. The first denomination, comprehending all the bogs west of Frenchpark, as contained in Map, N° 1.; and the second denomination, comprehending the bogs east of Frenchpark, as contained in Map, N° 2. On these Maps are marked all the section lines of main drainage, &c. from N°. 1. to N°. 111. inclusive, together with every present and proposed road in the district; and also shewing, in as many places as the scale would permit, the number of feet and inches of each particular point above the surface water of Lough Garra in midsummer. On account of the minuteness of these Maps, I have (to prevent confusion) omitted to mark the system of

Minor

N° 1.
Mr. Longfield's Report on Lough Gara Diſtrict.

Minor Drainage, which is described on the large Map, and which I have already stated will form patches of about 10 Irish acres, and are laid out so as to embrace the best possible fall to their respective outlets.

Sections.

I have also the honour to lay before you the section book, in which you will find described the height and depth of every corresponding line as marked and numbered in the maps, and also the depth of the proposed main draining, the whole length of which, amounts to 171 miles 2 furlongs 27 poles, Irish measure, equal to 219 miles 2 furlongs 27 poles English measure.

In addition to the fair maps and sections which I lay before you, I beg leave to observe, that all the original rough maps which are in my possession, are laid down on a large scale of 40 perches to an inch, and therefore may be considered the only materials by which the drainage could at a future day be satisfactorily laid out for the purpose of commencing the actual operations of bog improvement.

In submitting the foregoing Report to your consideration, my object has been confined to recommending a plain and efficacious system of drainage, applicable to the districts committed to my charge; without entering into any speculative or very expensive plans of improvement, for bringing into a profitable state those immense wastes that now nearly cover the whole face of a country, the profitable islands and peninsulas of which are occupied by a numerous and industrious population, that would in a few years turn these tracts to agricultural purposes, provided they were apportioned to them in a consolidated state, for such term of years as would insure them a suitable return for their labours.

On the whole, the maps, sections and report of the Lough Gara District, which I have now laid before you, are formed on the same general principles that I adopted on the river Brusna District which was honoured by your approbation; and should my endeavours in the present instance be equally fortunate, I shall ever esteem it the proudest occurrence in my professional pursuits.

I have the honour to be,
Gentlemen,
Your most obedient humble Servant,
JOHN LONGFIELD.

Dublin, 67, Grafton-street,
12th May 1812.

PLATE I.—*and* PLATE II. - -	*are to follow here.*